TKPM800
TKPM800TV

Netwwork Digital Signage Player

User's Manual

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1 System Architecture

Digital Signage Player System is an IP based media player network. There are three major components of the system:

1. Digital signage players, with one or more display devices connected to each player
2. Content Server that holds all contents files for the players
3. Signage player control server that provides an graphic user interface (GUI) for operators to control each and every player on the network.

There are three operation modes for the system.

1. Standalone mode: each signage player runs on its own, no network connection is available nor it needed
2. Poll mode: Content files are stored on a Web server for the signage players to grab on demand. Content Server need not be the same as Player Control Server in the poll mode operation.
3. Networked Interactive mode: Signage players connect to Control Server that runs this DSASVR application. An operator can configure, manipulate, and monitor each every online player. File transfer can be done via network and all feedbacks are immediate.

The Media Player System can be configured to work without networking ("Standalong Mode" shown in Figure 1, where operator is actually moves back and forth between the content center and the player).

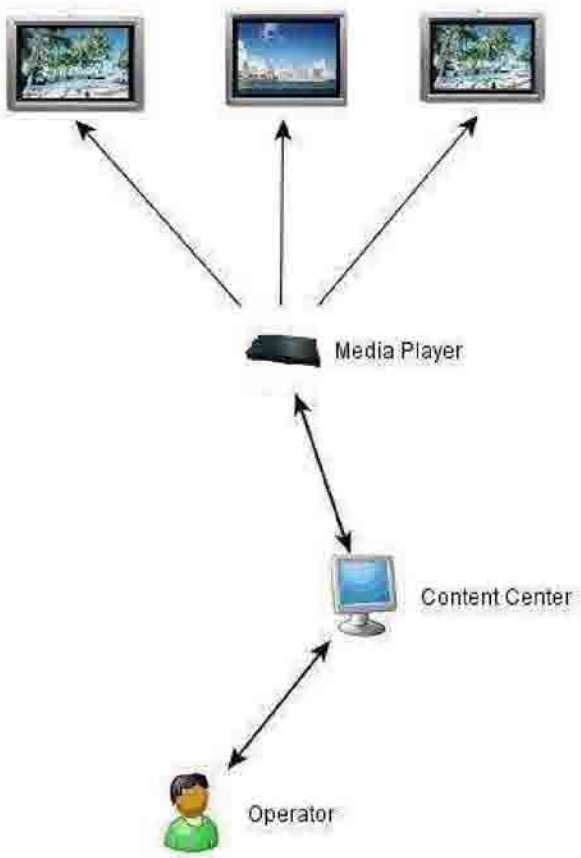

Figure 1: Simple non-networked system (Standalone mode)

Or the Signage System can be configured to work with a internet or intranet environment (Figure 2).

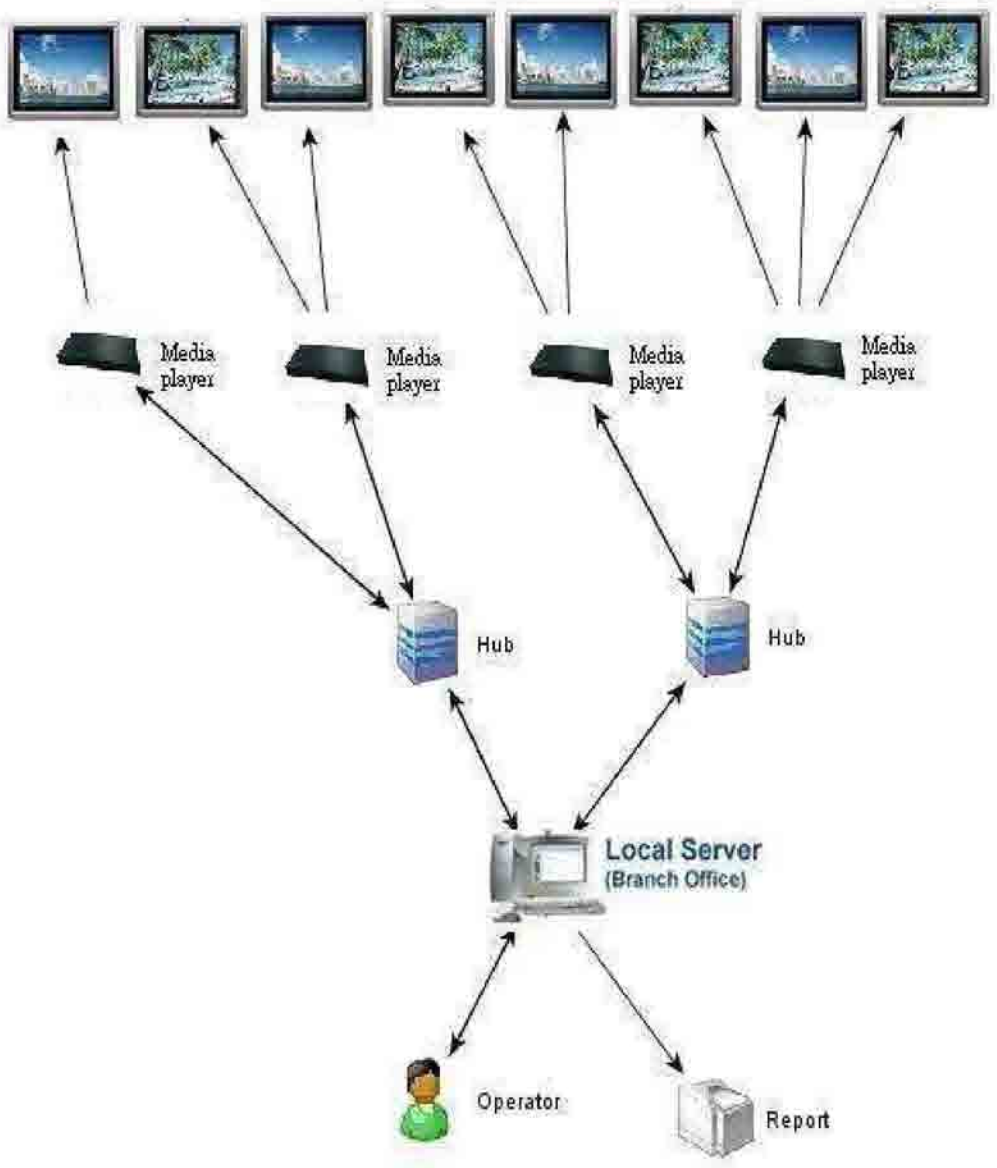

Figure 2: Networked Digital Signage Player System

The Signage System can even be configured as Multi-System across Internet (Figure 3).

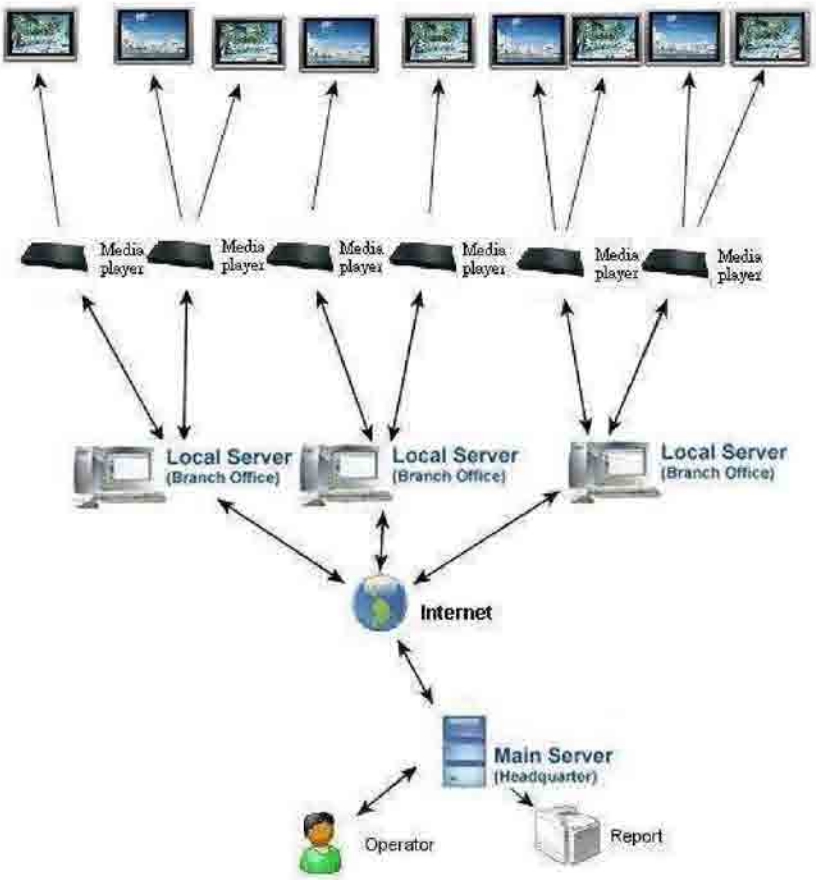

Figure 3: Internet Digital Signage Player System

2 Default Values

The signage player comes with default factory setting as the followings:

1. IP Address of Media Player: Intranet static IP 192.168.88.30.
2. IP Address of Content/control Server, static IP 192.168.88.2.
3. Video Output: D-Sub-15 VGA. Connector, default output resolution is standard VESA 1024x768 60Hz

If, for some reasons, the network settings are lost, power cycle and player and the network settings can be seen on display for a few seconds during the system startup. These values can then be changed through the DSA controller program.

3 Setup Signage Player

1. Verify the IP address of the Signage Player.
2. Connect Ethernet cable from the Signage Player to the Hub. **Caution:** Direct connection from the Signage Player to Content Center by a cross cable is possible but not guaranteed. Some Ethernet line driver simply does not support such kind of operation. It is strongly recommended to always use a hub.
3. Connect D-Sub-15 signal cable of the TV or Monitor to Signage Player. The video output connector can be changed after the signage player connects successfully to the content server.
4. Connect power cord to Signage Player. Turn on both Content Server and Signage Player. Then the operator can change the configuration (networking, video, screen and so on) to join the new signage player into the network.

4 Install DSA Controller Software (DSASVR)

1. DSASVR runs on any PC with Microsoft Windows 2000/2003 or XP. In the case of a new Windows XP installation, make sure the XP built-in personal firewall is disabled.
2. Verify the IP address of Content Center from the startup screen of the signage page..
3. If there are older releases of DSASVR installed already, it is recommended to uninstall it from Windows Control Panel.
4. A new release of the player control and content management software by simply executing the installable set up file.
5. For the first installation, the media repository needs to be created. The default location is C:\MediaCenter\. At least two subdirectories need to be created: "C:\MediaCenter\Video" for video files, and "C:\MediaCenter\Pictures" for still pictures.

5 Copying files into Media Repository

The media content repository can be managed using conventional Windows file manager.

1. Copy video footages into C:\MediaCenter\Video\
2. Copy pictures or still images into C:\MediaCenter\Pictures\

The default media repository can be changed once the content management software is up and running. If new files are added after the content management software is running, The "Server Contents" window needs to be refresh to see the new additions.

6 Starting DSASVR Software

Double left click the iDSA Controller icon on desktop. The operator can see the screen as Figure 4.

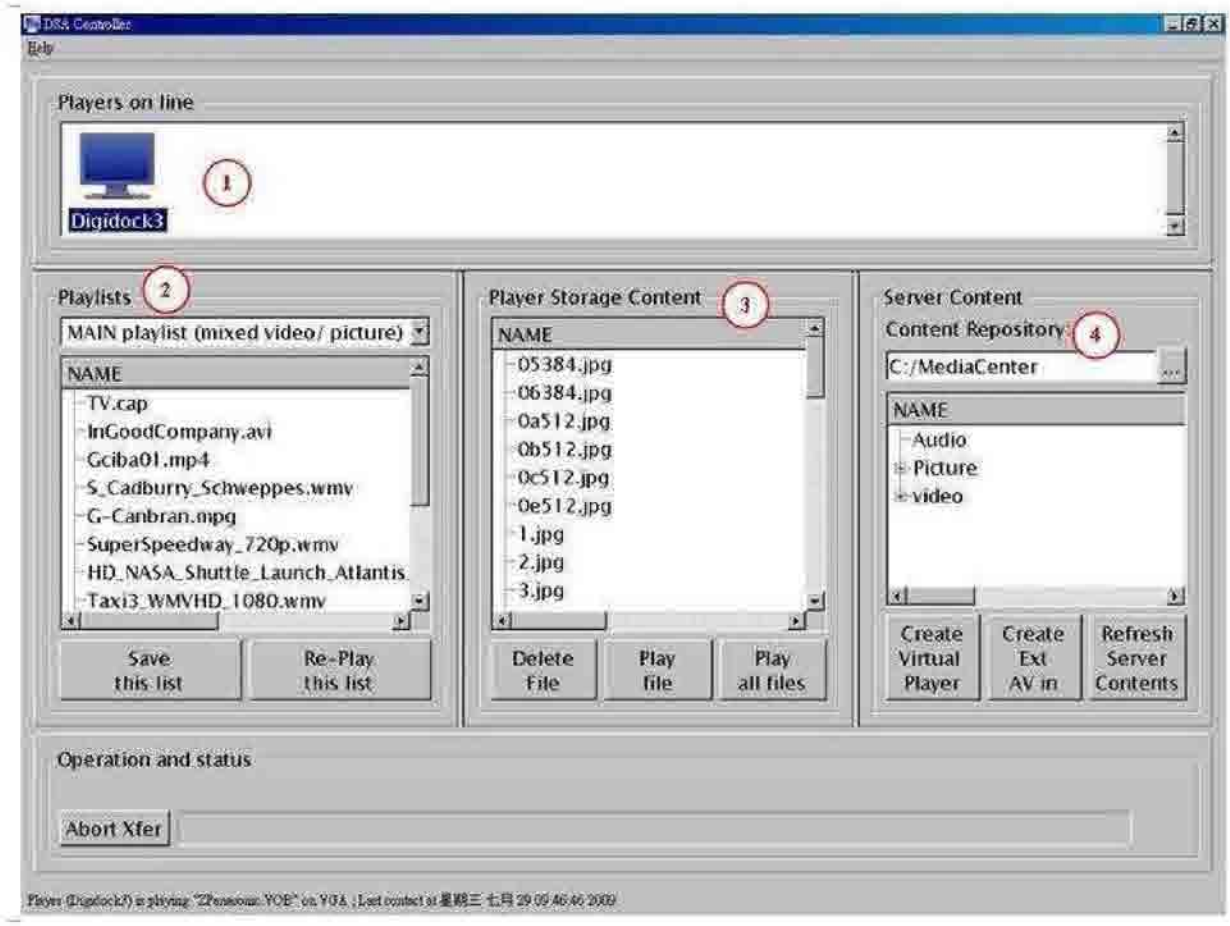

Figure 4: Typical DSASVR windows

See Figure 4 for the screen display of DSASVR. There are 5 major panes on the screen: 1). Players on line pane. 2). Playlist pane. 3). Player Content pane. 4). Server Content pane. 5). Operation and status pane. (Four panes size are adjustable.) There is also a near real time player status feedback line at the bottom of the window. This line is updated periodically and spontaneously by the selected player indicates which file the selected player is playing on which video output connector and when was the last time this player has been seen on the network.

1. Players on line pane: In Figure 5, the upper part on the screen is Players on line pane.
    A. Turn on a signage player. It will take 30- 90 seconds to have its icon displayed on the pane. See Fig. 5. The signage player Digidock3 is online.
    B. If more than one signage player on network is connected, each one will have its own icon. Duplicated player names are not allowed. Network management menu item will let the

operator to change player name.

C. **Caution:** Virus protection software or firewall may block the message from the signage player to the Content Center. If you can not see the icon displayed on the Players on line, check the system setup of Content Center.

2. Playlist pane: In Figure 4, the left part of the screen is the Playlist of signage player Digidock3. Each display area of the split-screen mode operation has its own corresponding playlist, selectable via the combo box at the top.
3. Player Content pane: In Figure 4, the center part of the screen is the Player Content pane. This pane contains the files already stored in the play's storage device.
4. Server Content pane: In Figure 4, the right part of the screen is the Server Content pane. The operator can see allfiles in the content server in this pane.
5. Operation and Status pane: In Figure 4, the status bar of "Operation and Status" is the status of the progress of the file copy from the databank of the Content Center over the network to the Signage Player. The "Abort Xfer" button is used to abort the file transfer.
6. In Figure 4, there is a status line at the very bottom. It displays current status of the online player as well as other short messages.

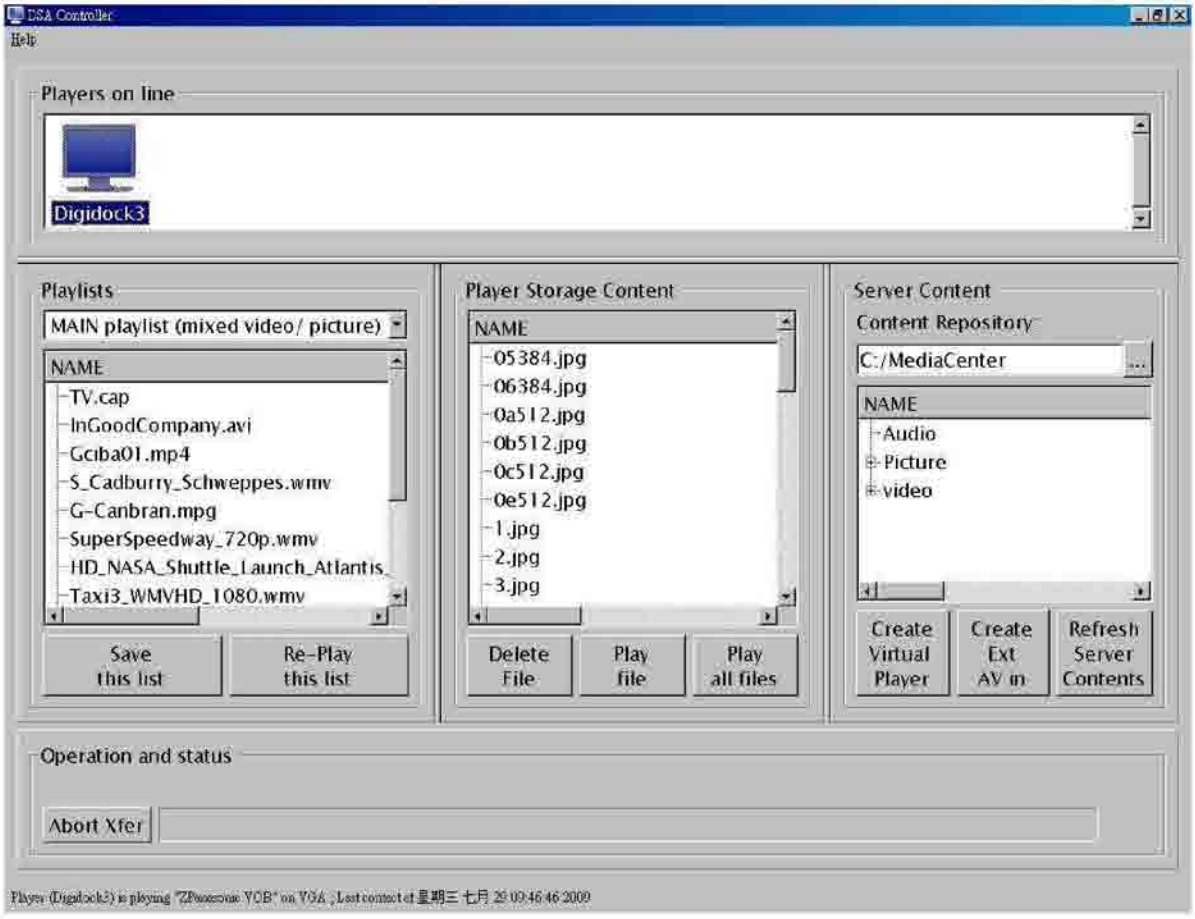

Figure 5: Player online

7 Networked Interactive Operation

1. A new signage player enters or leaves the network:

i. Turn on a signage player, wait for a few seconds and an icon of the signage player will appear on the "Players on line" pane. Left clicking the player's icon will display all of files stored in player's storage device on "Player Content" pane as well as showing the current playlists in "Playlist" pane as shown in Figure 6.

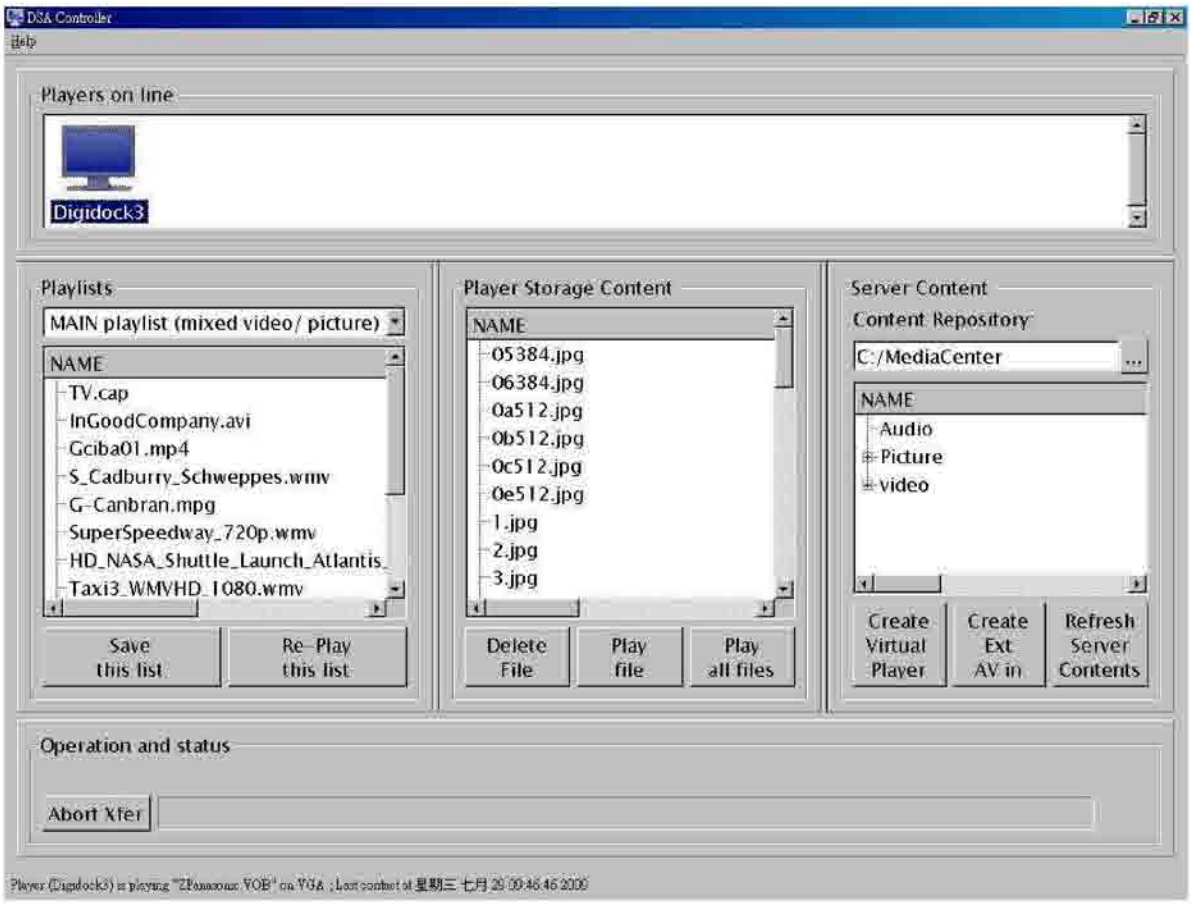

Figure 6: A new player comes online

When the signage player is turned off or the Ethernet connection is lost, DSASVR will try to re-establish network connection. When the attempt to re-connect the player fails, the player icon will disappear from the window.

2. Right click on the icon of a signage player. A pop-up menu is displayed with functions listed and explained below. See Figure 7

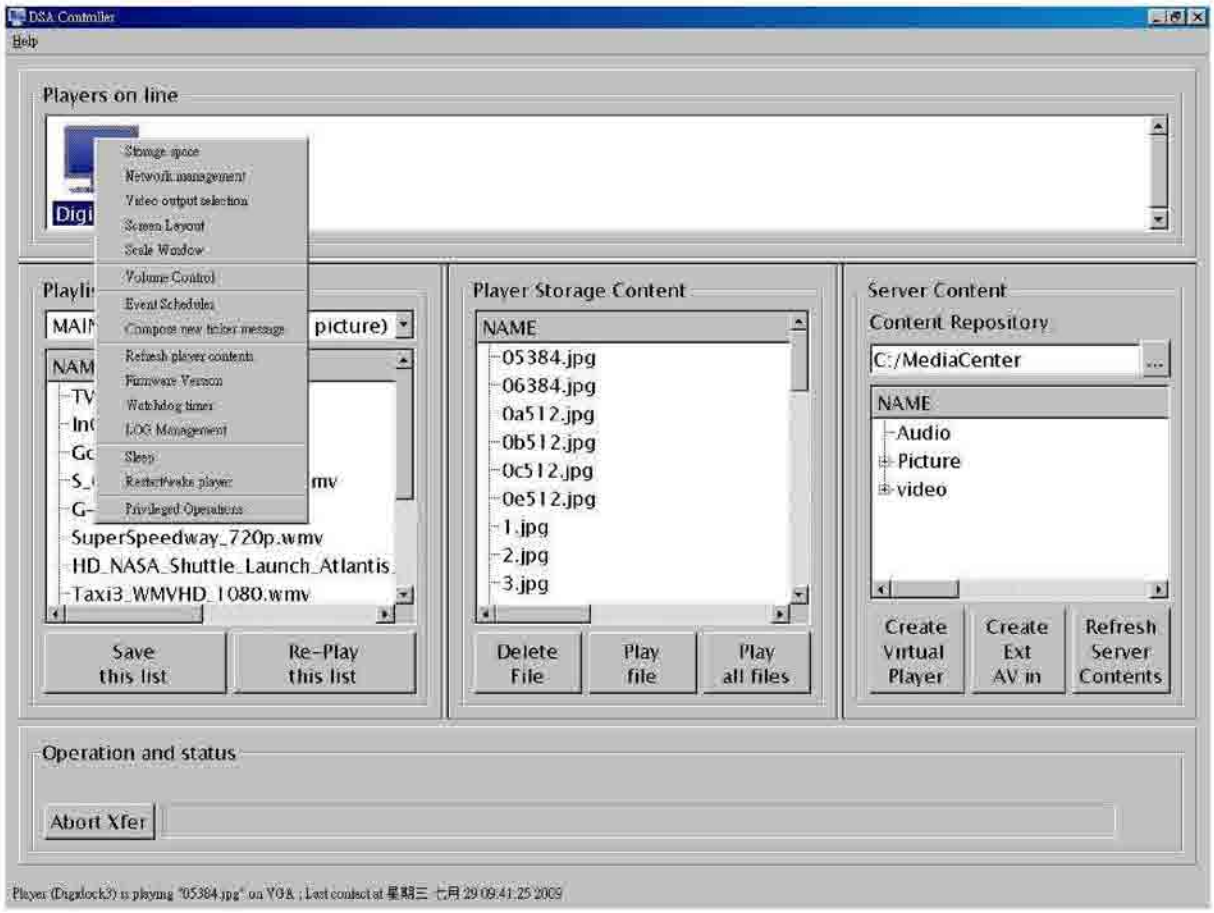

Figure 7: Player configuration popup menu

A. "Storage Space": The total storage space and available storage space of the signage player

B. "Network Management" (Figure 8): There are three sub functions in three tab windows.

   1、 DSA Server (Figure 9) Use this to change IP address of the expected content and control server on next reboot, as well as the signage player's name.

   2、 LAN (Figure 10) Use this tab window to configure the LAN parameters. Note that the LAN chip can be disabled from this window. However if both LAN and WiFi chips are disabled, the signage player will lose all network connection. Therefore force the player to be in the standalone mode. Furthermore, only one of LAN and WiFi chips can be enabled for action.

   3、 WIFI (Figure 11) Use this window to configure the Wireless LAN.

Changing network parameters require a reboot of the player.

In case the network parameters are lost or mis-configured and the network become unreachable. The operator can read the network parameters from the bootup screen to determine whether the current setting is correct. If there is a need to reset network parameters, refer to USB network reset procedure described in Section 11 (page 56).

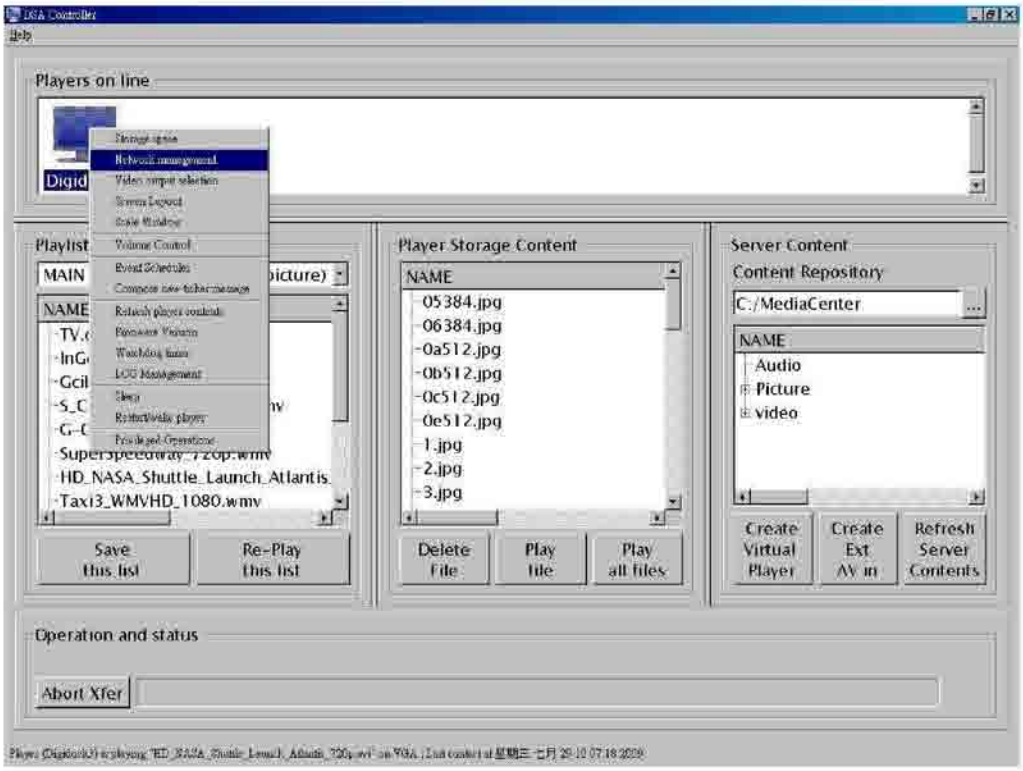

Figure 8: Network management menu item

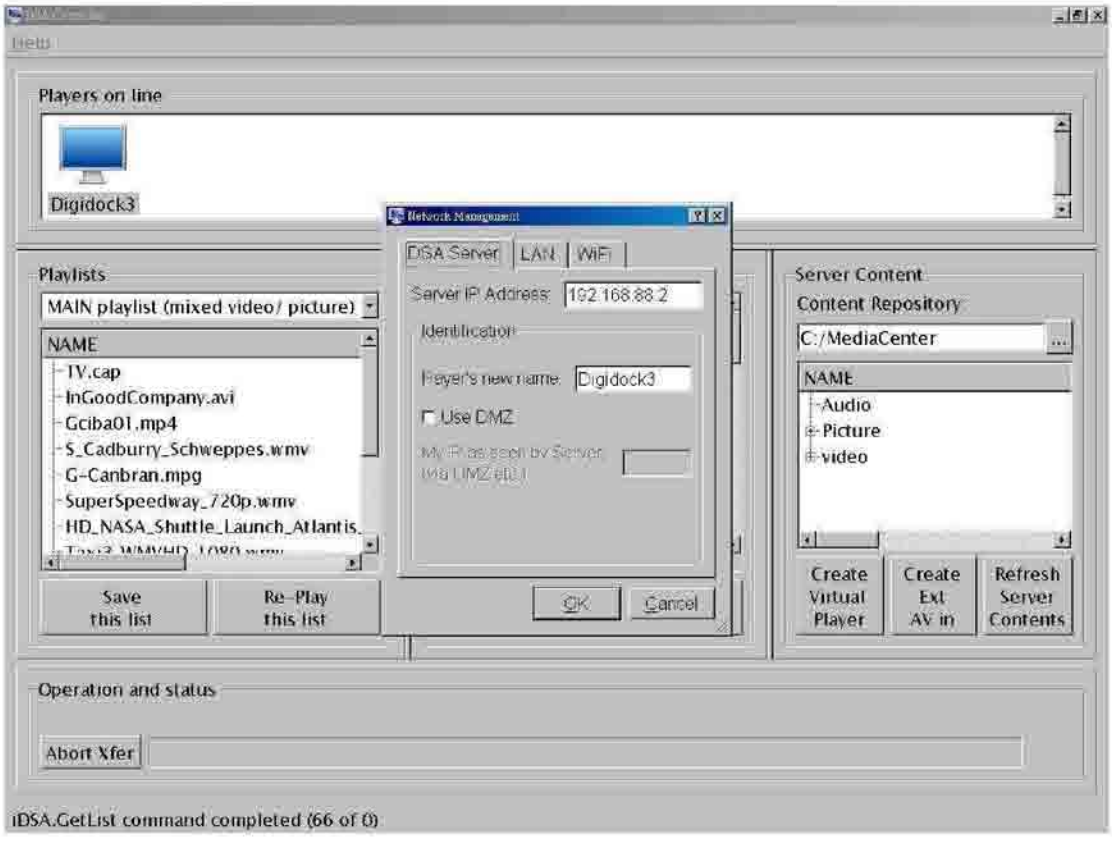

Figure 9: Server tab window

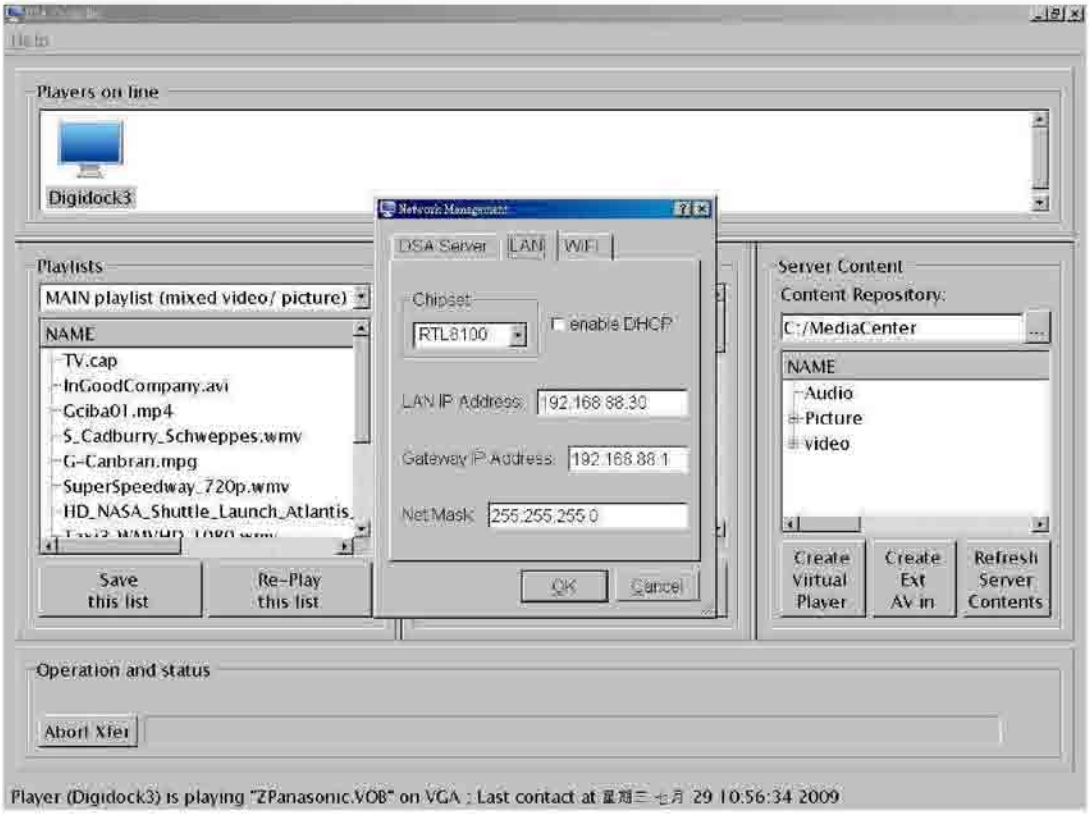

Figure 10: LAN tab window

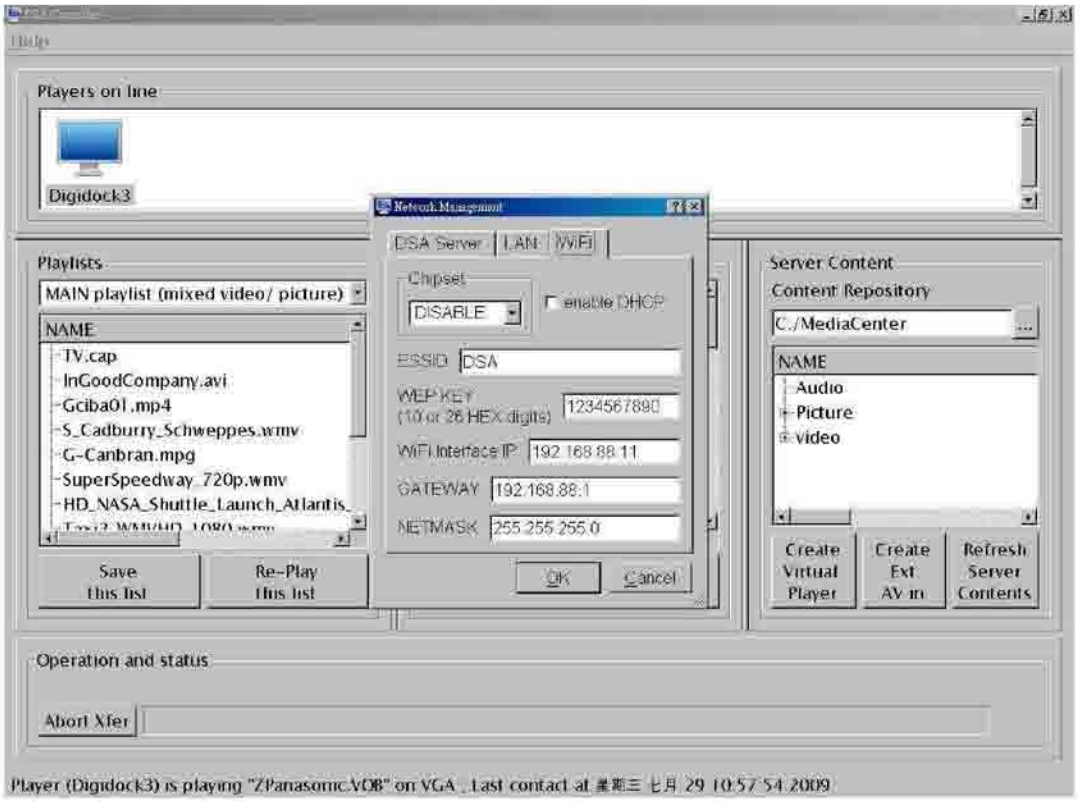

Figure 11: Wireless LAN tab window

C. "Video Output Selection": See Figure 12. Left click "Video output selection" menu item, the operator can change video output from the list (Figure 13) on next reboot. Note that the current video output selection is the one with checkmark on the left.

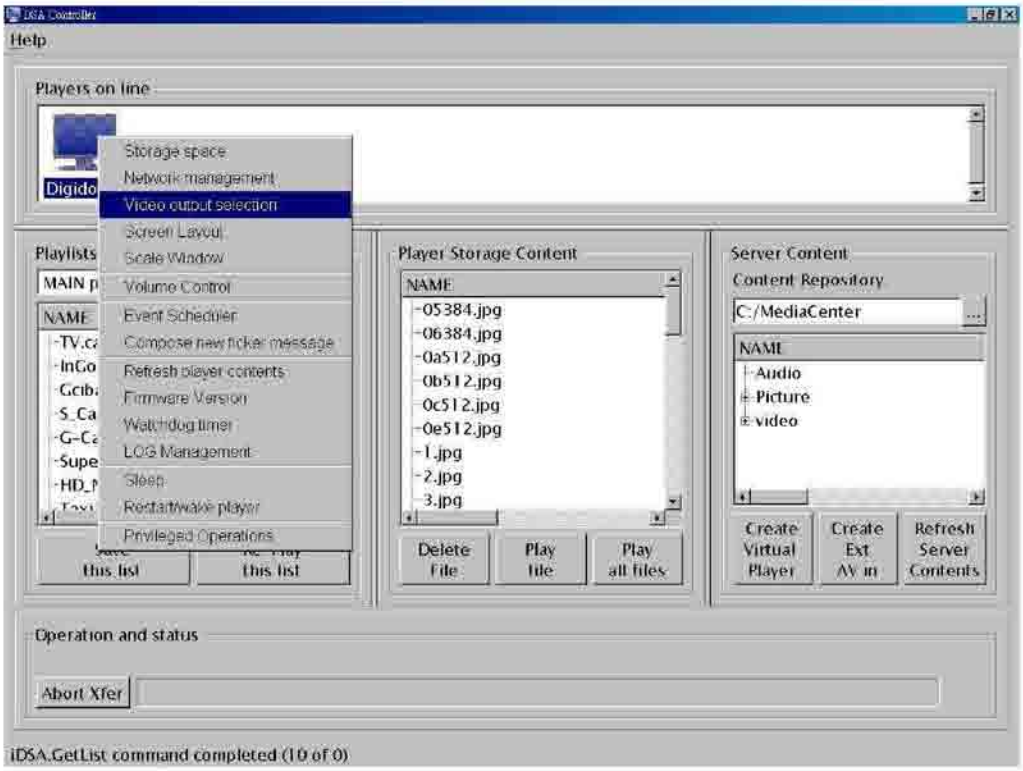

Figure 12: Video output connector menu item

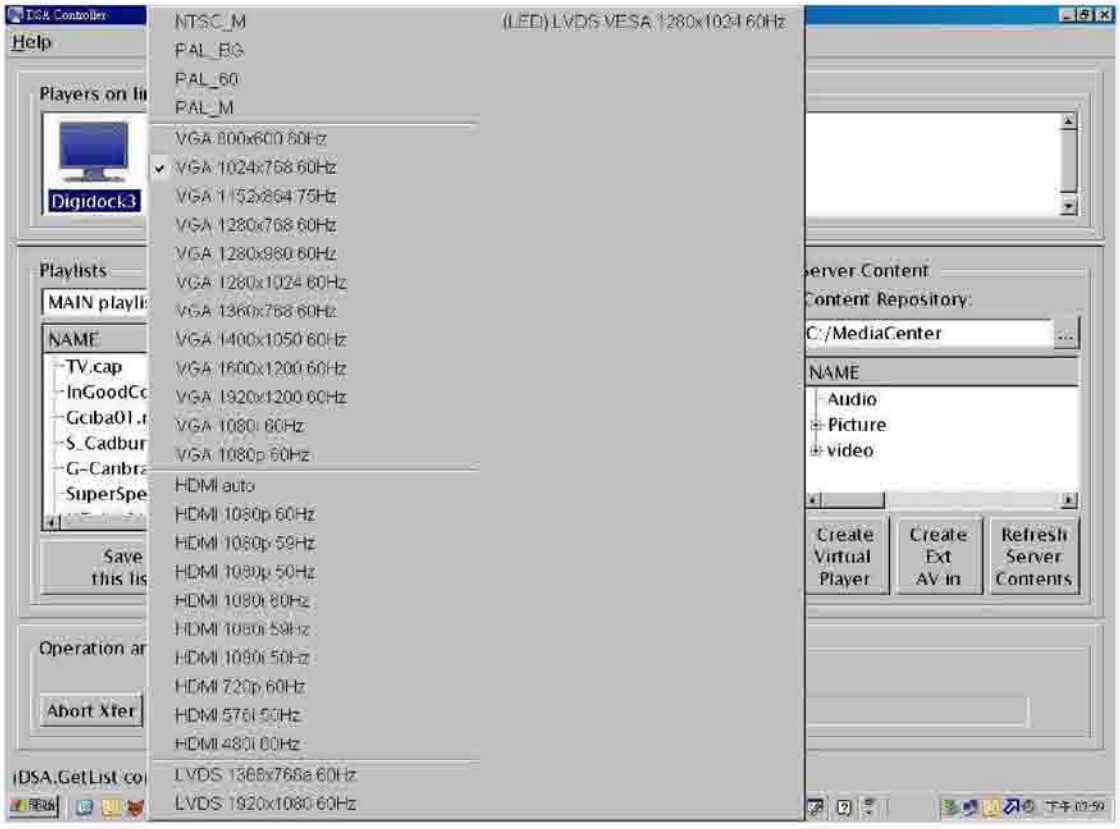

Figure 13: Video output selections, current setting has a checkmark

D. "Screen Layout": See Figure 14 and Figure 15 to define the split-screen layout. There are eight standard screen layouts available to choose from.

Left click "Screen Layout" menu item(Figure 14), a popup menu lists all these templates (Figure 15). Current screen layout is marked by a checkmark. Click the new screen layout, follow the prompt to reboot the machine for the new screen layout to take effect.

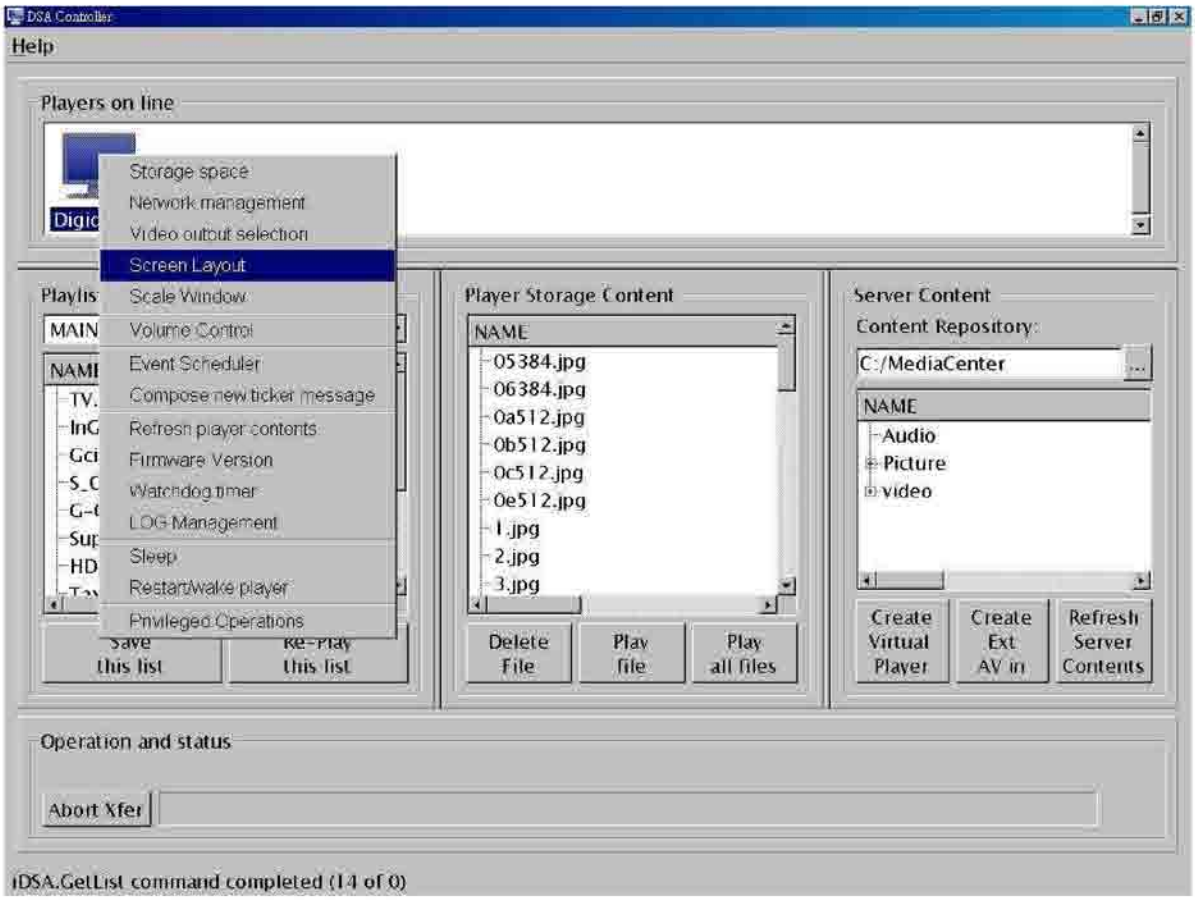

Figure 14: Split-screen layout menu item

Note that there are numbers labeled in each screen layout (Figure 15).

The grid labeled 'M' is the main video display area. This area can be used to show video and still picture files and is associated with "MAIN Playlist" during the playlist arrangement.

The strip labeled "message" is the ticker area. The content of the area is controlled by ticker functions.

The grids with a numeric label (0, 1 and 2) are the places for displaying still pictures. The contents are governed by Playlist0, Playlist1, and Playtlist2 respectively.

All these playlists are independent to one another.

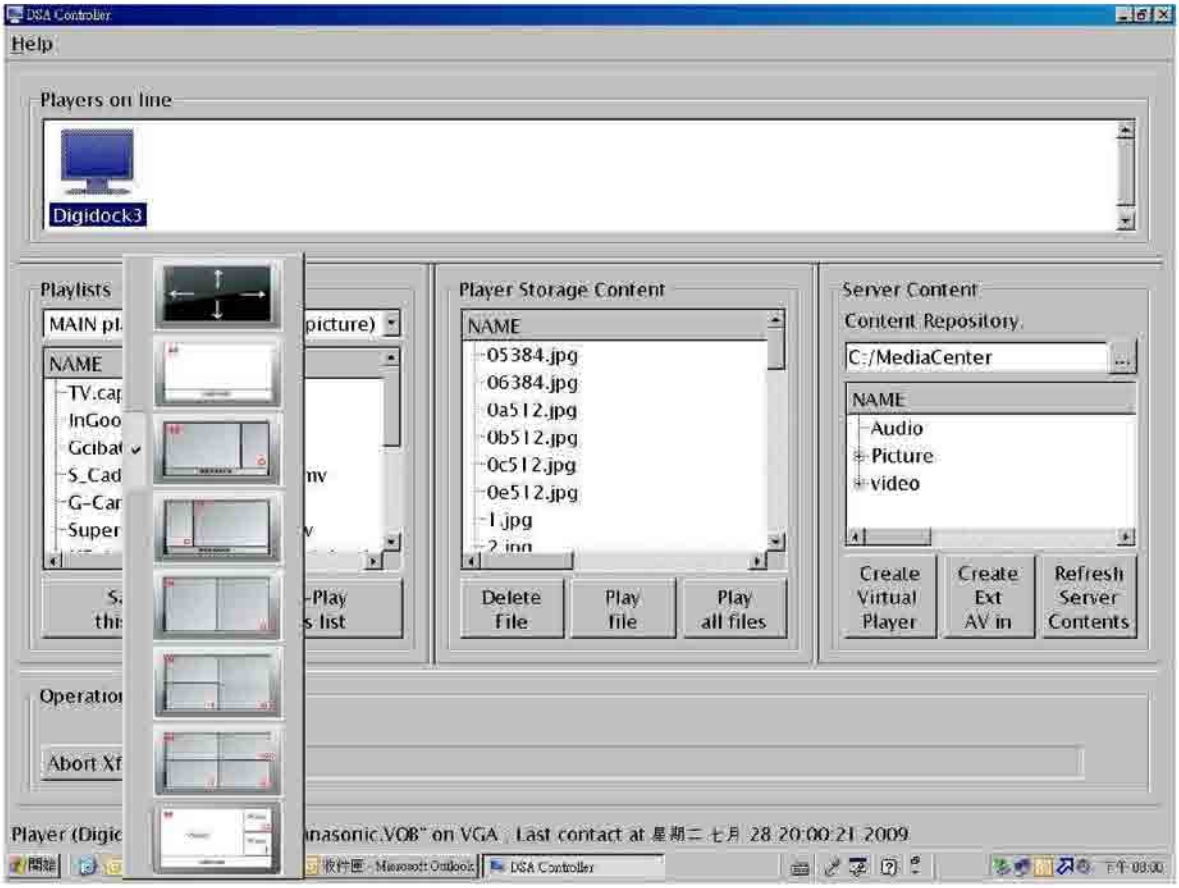

Figure 15: Split-screen layout selections

E. "Scale Window" See Figure 16 and Figure 17.

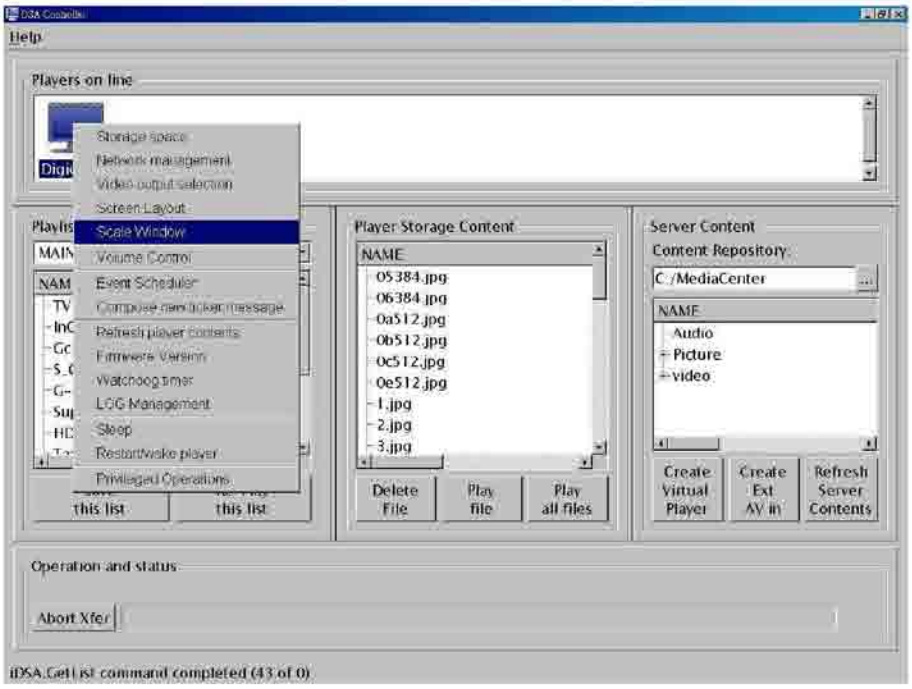

Figure 16: Scale Window menu item

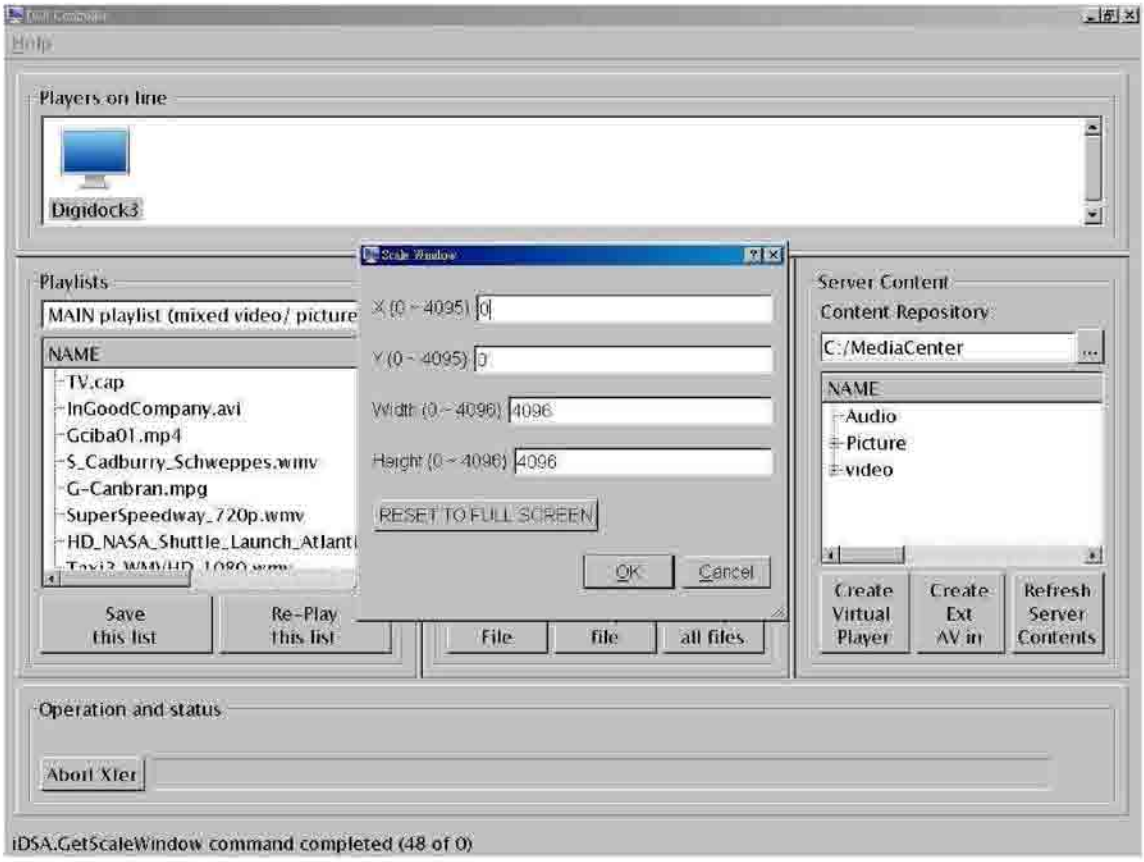

Figure 17: Scale Window paramters

Imagine a virtual canvas of size 4096 pixels by 4096 pixels, all display data are drawn on this

canvas. This canvas then is mapped onto the physical screen to be displayed. By changing the position and dimension of the display data on this virtual canvas, the operator can scale and translate the video and pictures anywhere on the screen at any size regardless of the physical display (TV or Monitor) properties.

In Figure 17, X and Y specify the reference coordinates of the display data relative to the virtual canvas and Width/Height specify the size. For example, X=0, Y=0, Width=4096, and Height=4096 makes a full screen display. X=0, Y=0, Width=2048, and Height=2048 squeezes the entire display onto upper left quadrant of the TV or monitor.

F. "Volume Control": See Figure 18 and Figure 19.

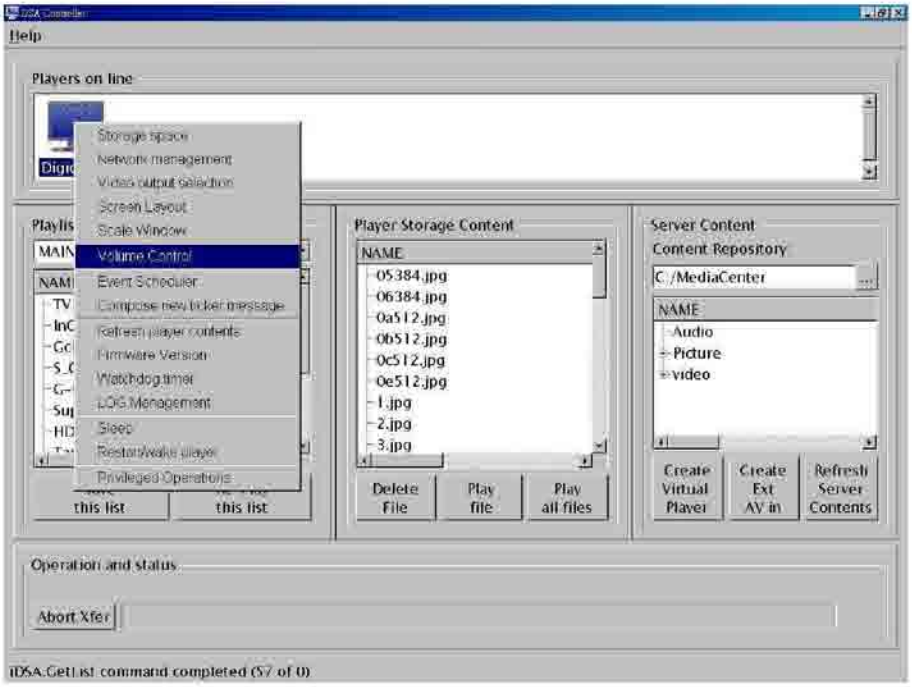

Figure 18: Volume Control menu item

Click the "Volume Control" menu item (Figure 18) to bring up the volume adjustment dial.(Figure 19). Turn the dial to adjust the volume of the selected player.

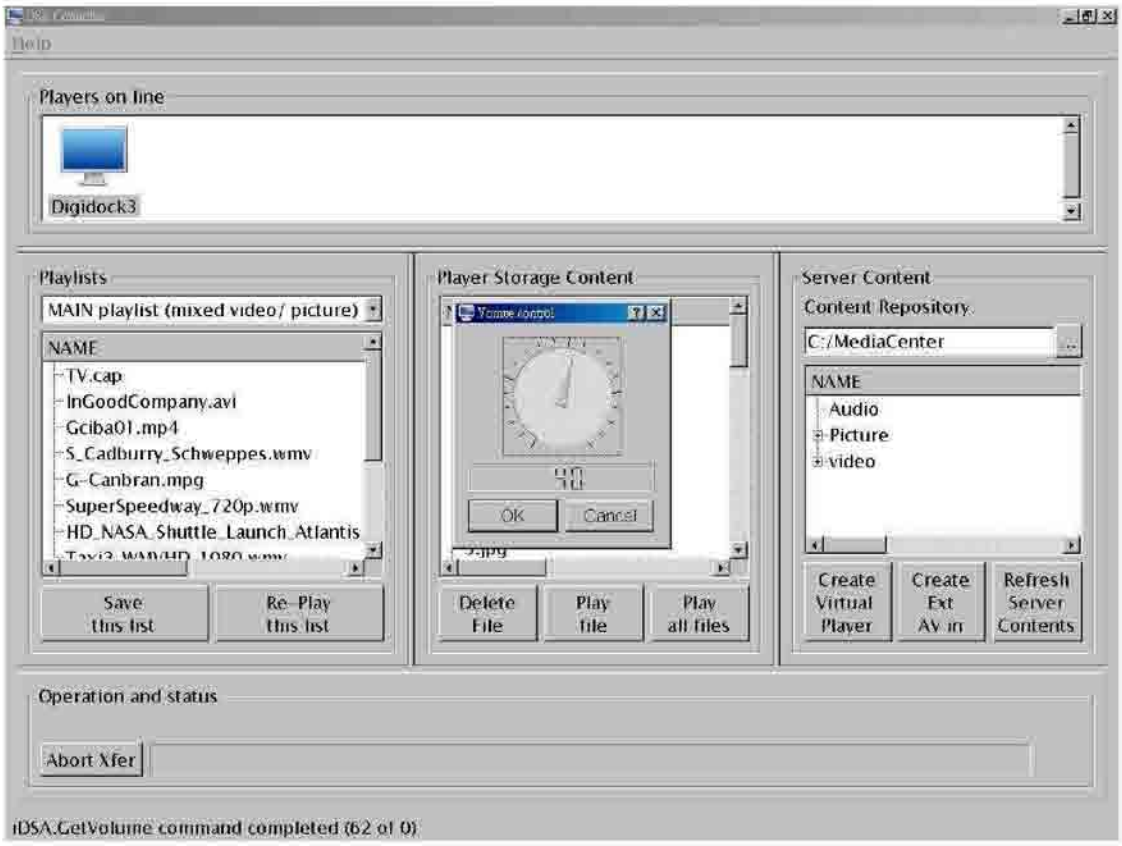

Figure 19: Volume Control dial

G. "Event/Task Scheduling": See Figure 20 and Figure 21. Task scheduling is a power tool. For more details, see Section 8: Event/Task Scheduling on page 46.

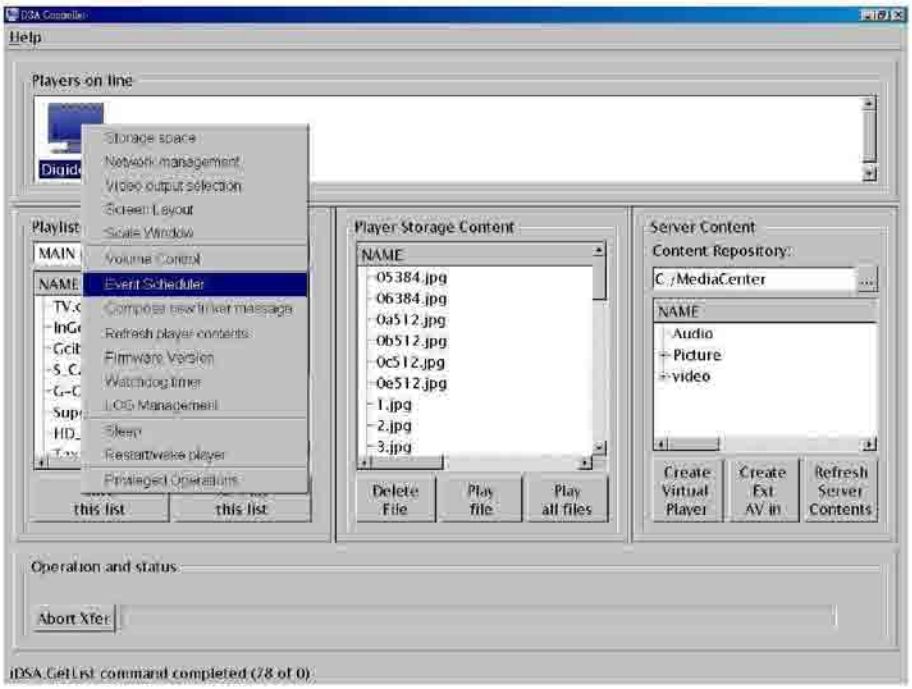

Figure 20: Event/Task scheduler menu item

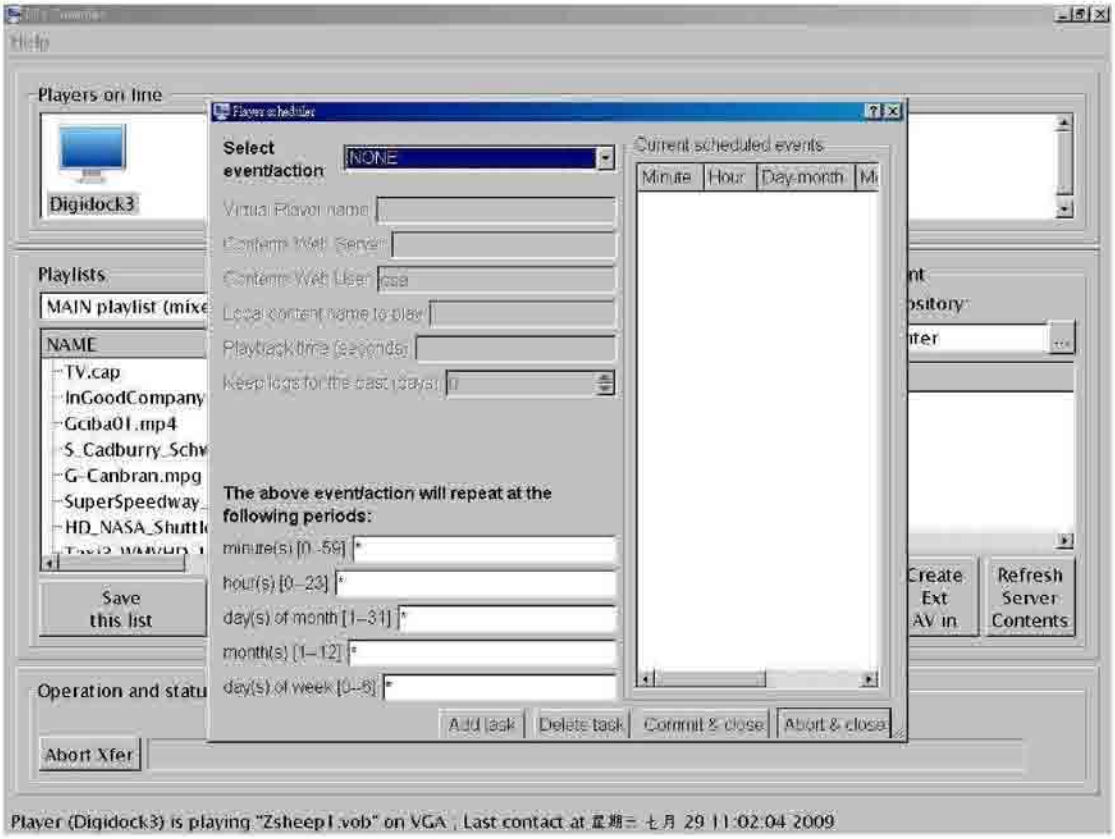

Figure 21: Event/Task scheudler dialog

H. "Ticker Message": See Figure 22 and Figure 23.

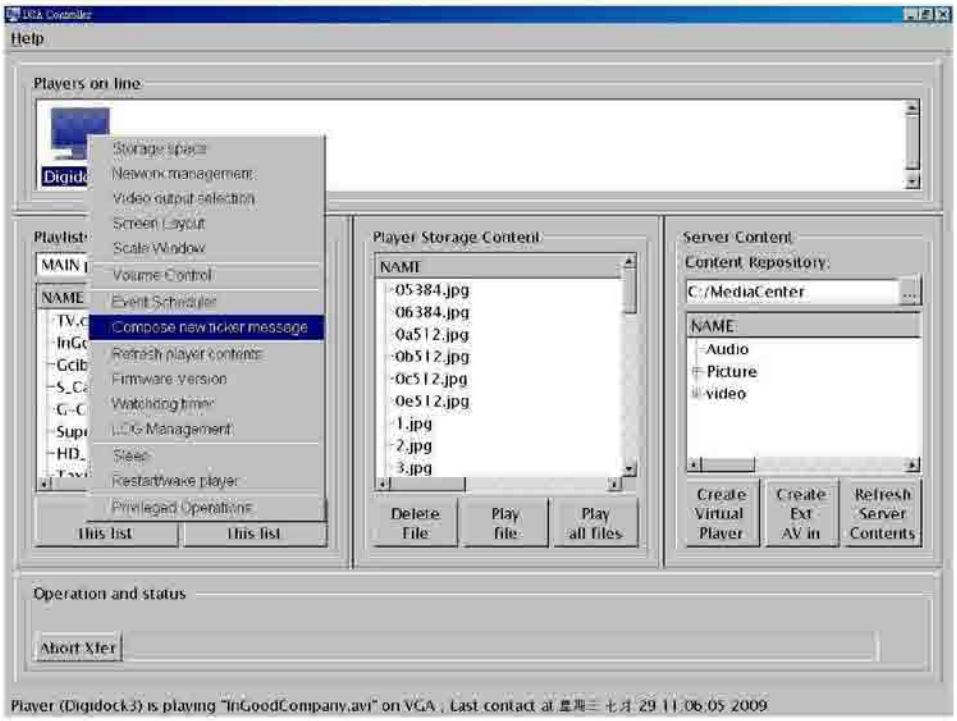

Figure 22: Ticker/Marquee menu item

Click "Compose new ticker message" menu item (Figure 22) to start editing a new ticker message (Figure 23).

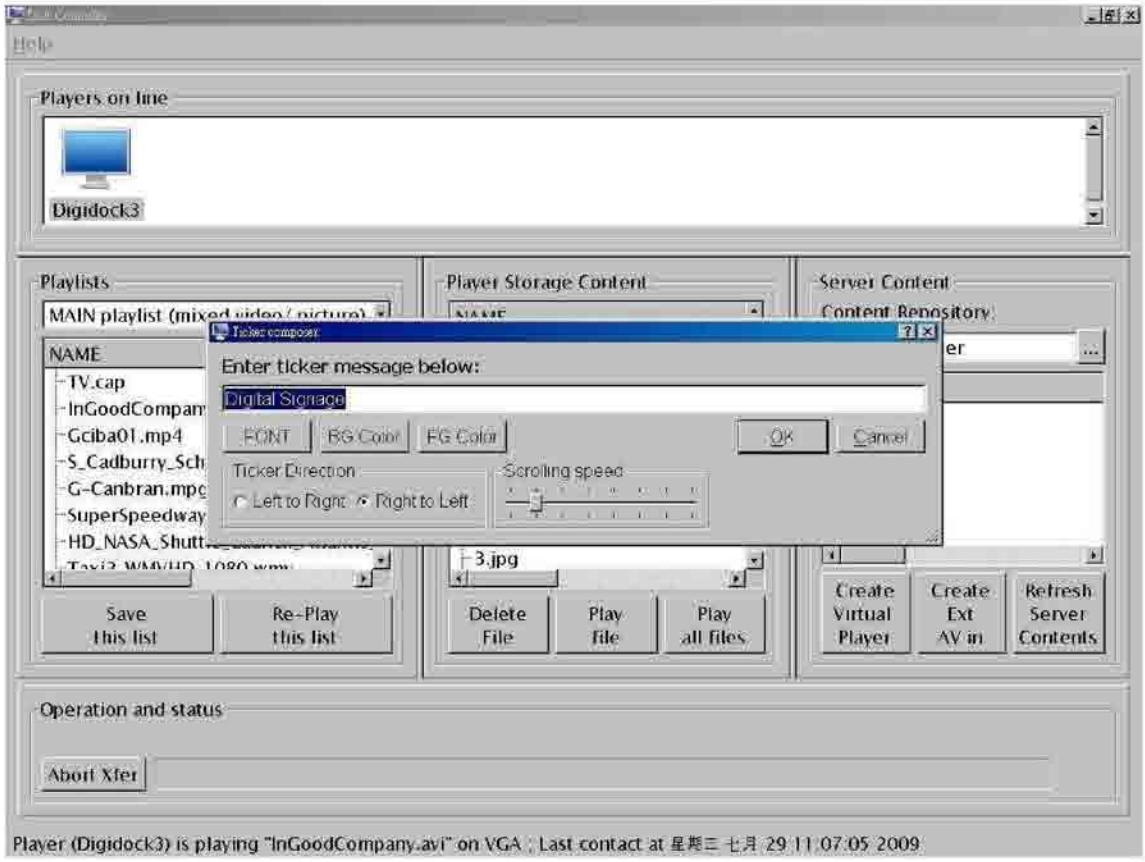

Figure 23: Ticker editor

The ticker message text supports any languages that is supported by the PC that runs this application. On the ticker editor, the operator can specify the font name (Figure 24), typeface (Figure 24), size (Figure 24), style (Figure 24), colors (Figure 25), scrolling direction (Figure 23), and scroll speed (Figure 23).

New ticker message will start as soon as the current message scrolls off the screen.

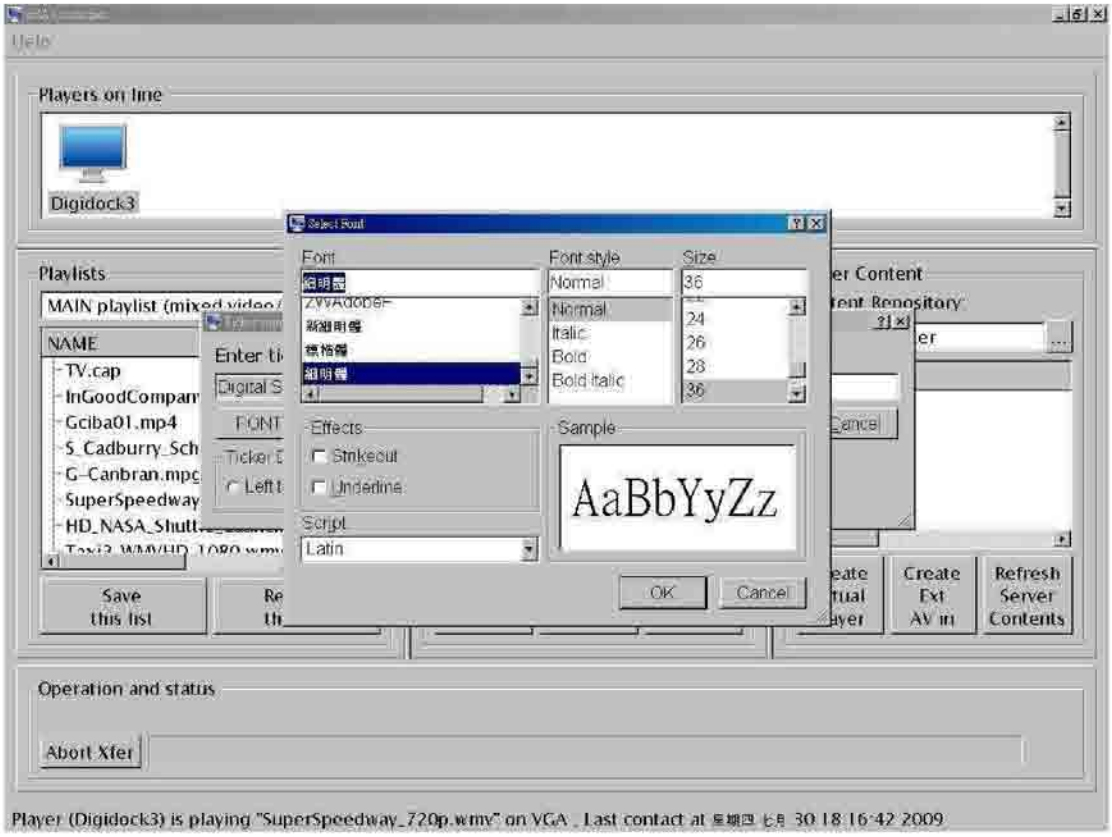

Figure 24: Ticker font selection

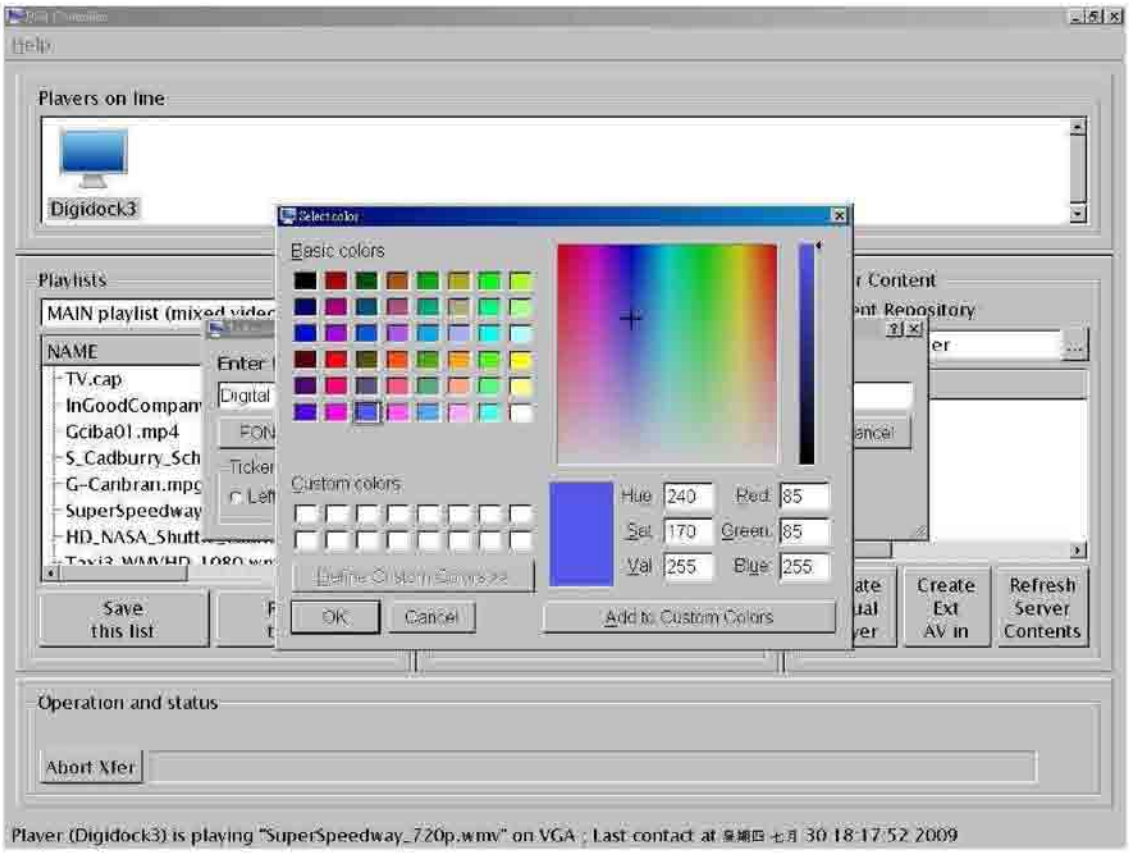

Figure 25: Ticker background and foreground colors selection

I. "Refresh player contents": Click this menu item to re-scan the current contents stored in the selected signage player and re-draw the "Player Storage Contents" window.

J. "Firmware Version" (Figure 26): This is to inform the operator the firmware revision number of the selected signage player (Figure 27).

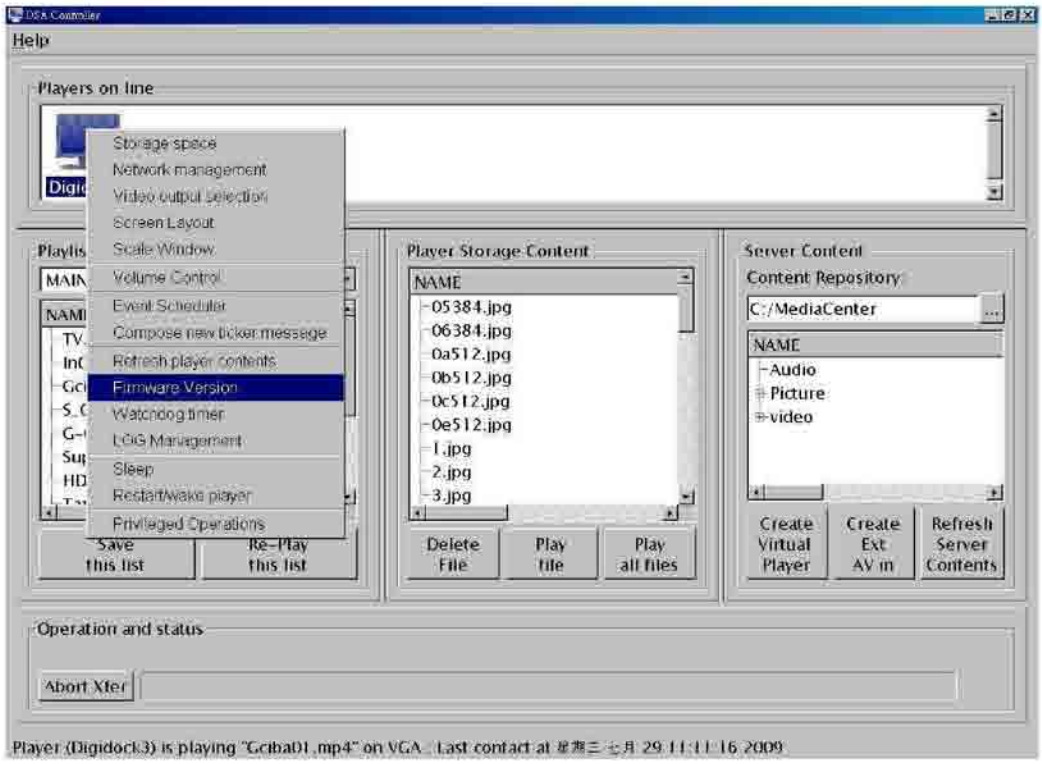

Figure 26: Firmware version menu item

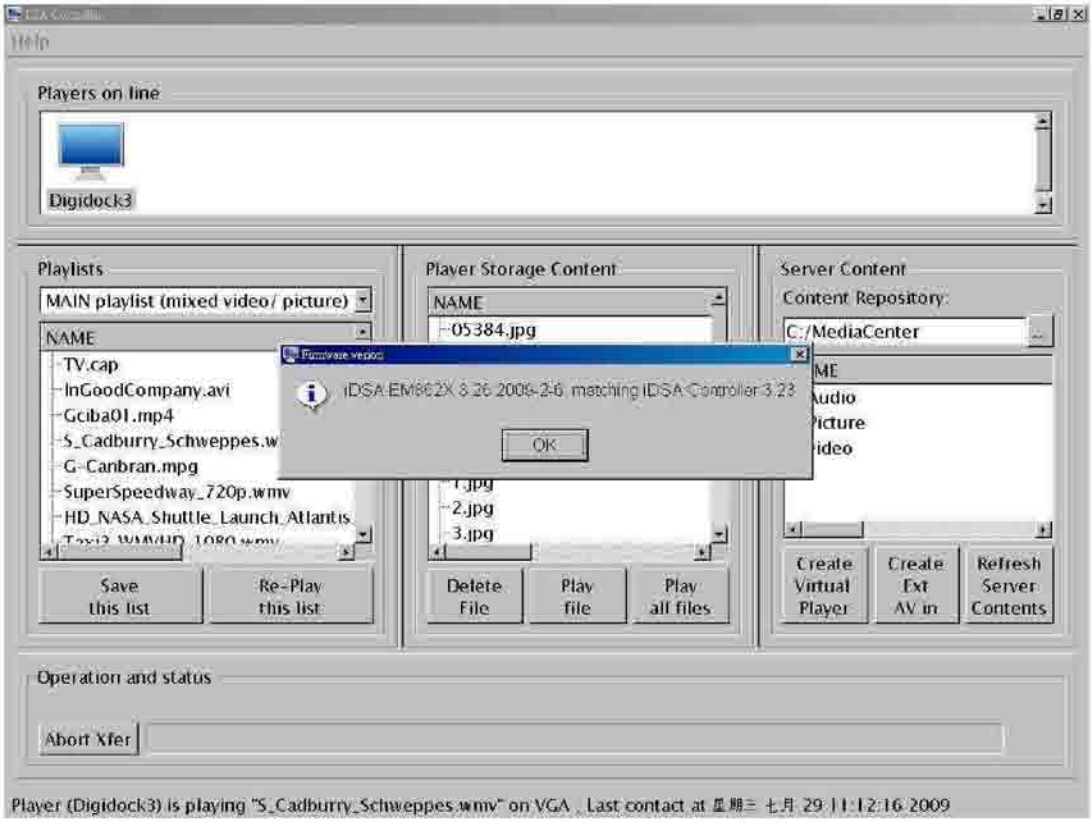

Figure 27: Firmware version display

K. "Watchdog timer" (Figure 26): Watchdog Timer is an industrial hardware device which restarts the system when there is any non-recoverable system error occurs. A timer in seconds is specified before the watchdog wakes up to reboot the sytem (Figure 29).The maximum wait period is 255 seconds.

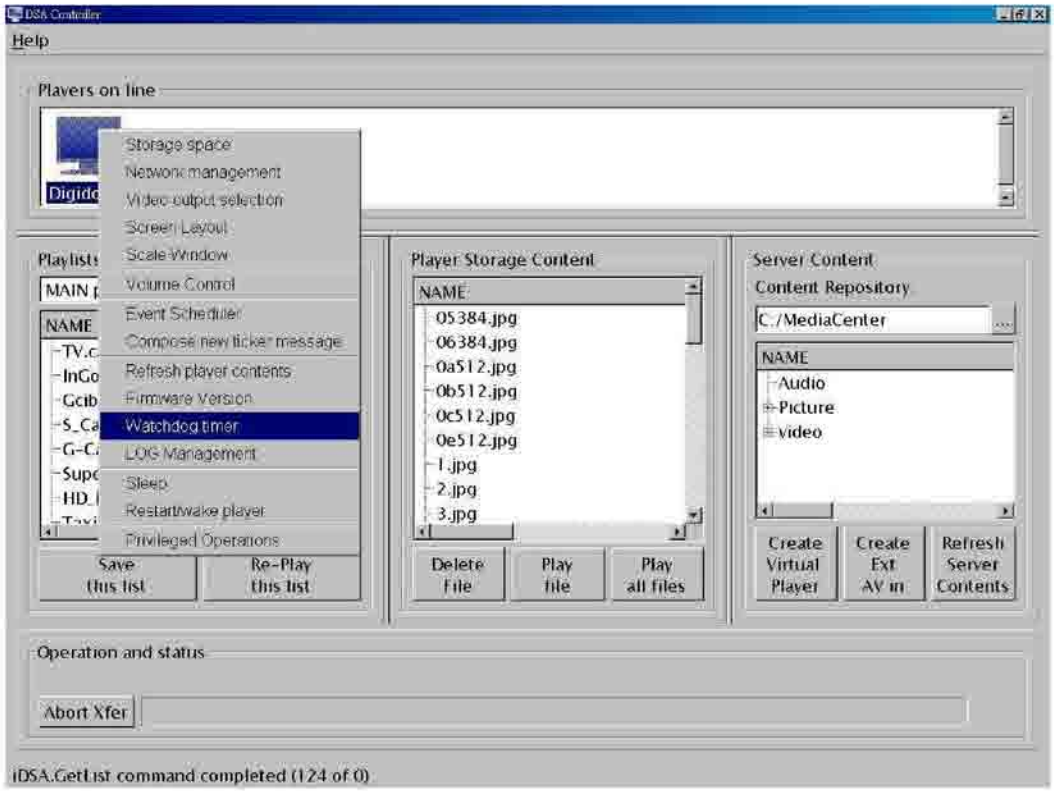

Figure 28: Watchdog menu item

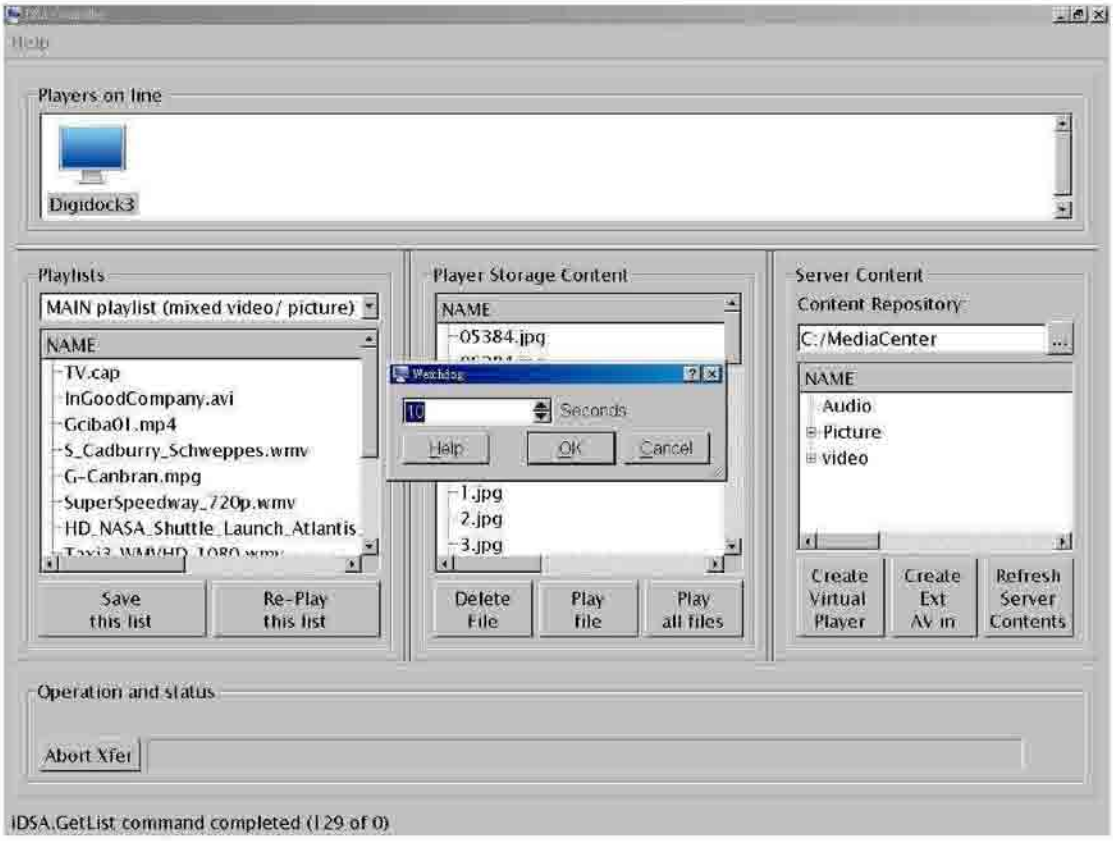

Figure 29: Watchdog entry

L. "LOG Management" (Figure 30): All events including local system status, information, error, and remote commands are recored in log files for bookkeeping, error diagnostic, and biling purposes. The log files are organized based on log dates. These log file can be accessed via log management dialog (Figure 31).

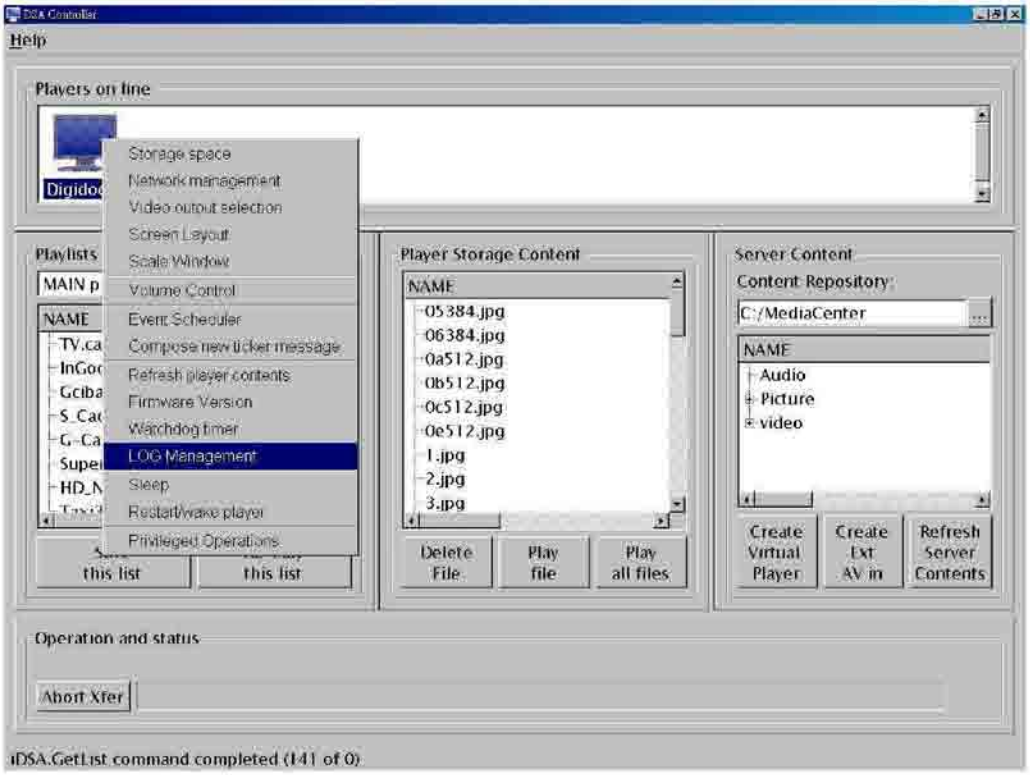

Figure 30: Log Management menu item

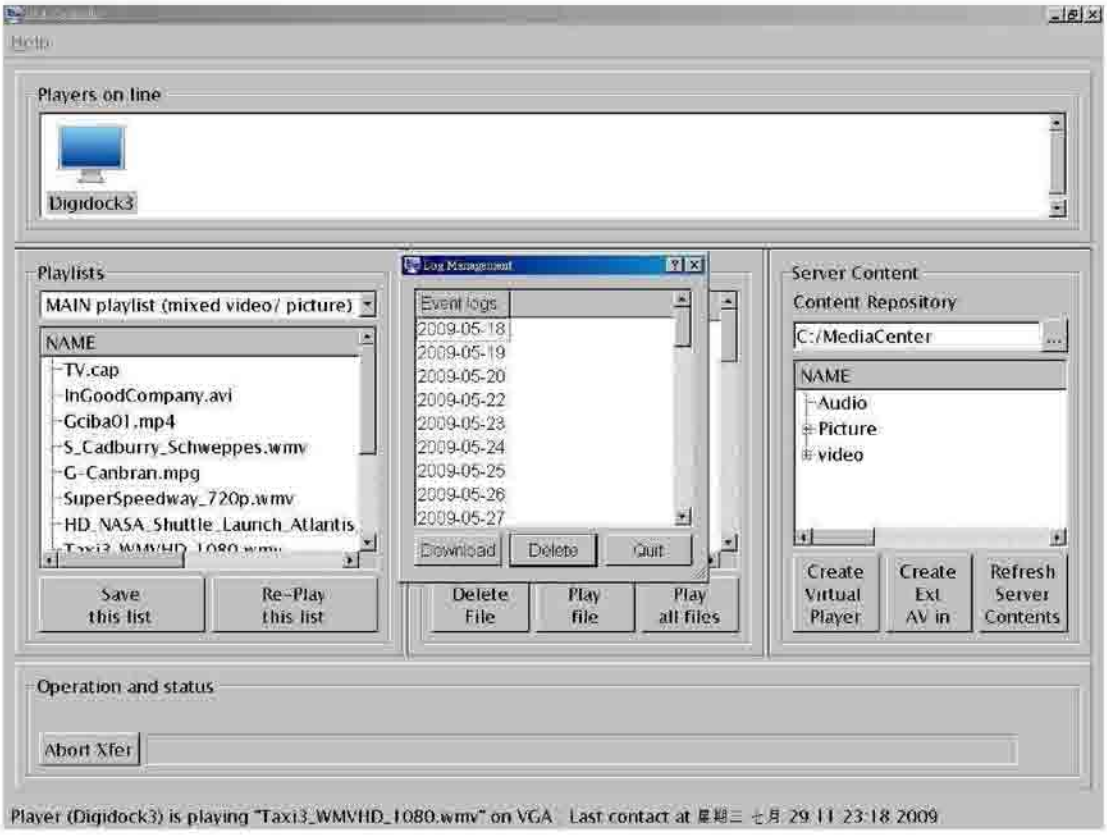

Figure 31: Log Management dialog

M. "Sleep" (Figure 32): Stop the selected signage player. Upon a successful execution of this command, the selected player will become dormant and the icon changes (Figure 33). All networking functions of such signage player is still active.

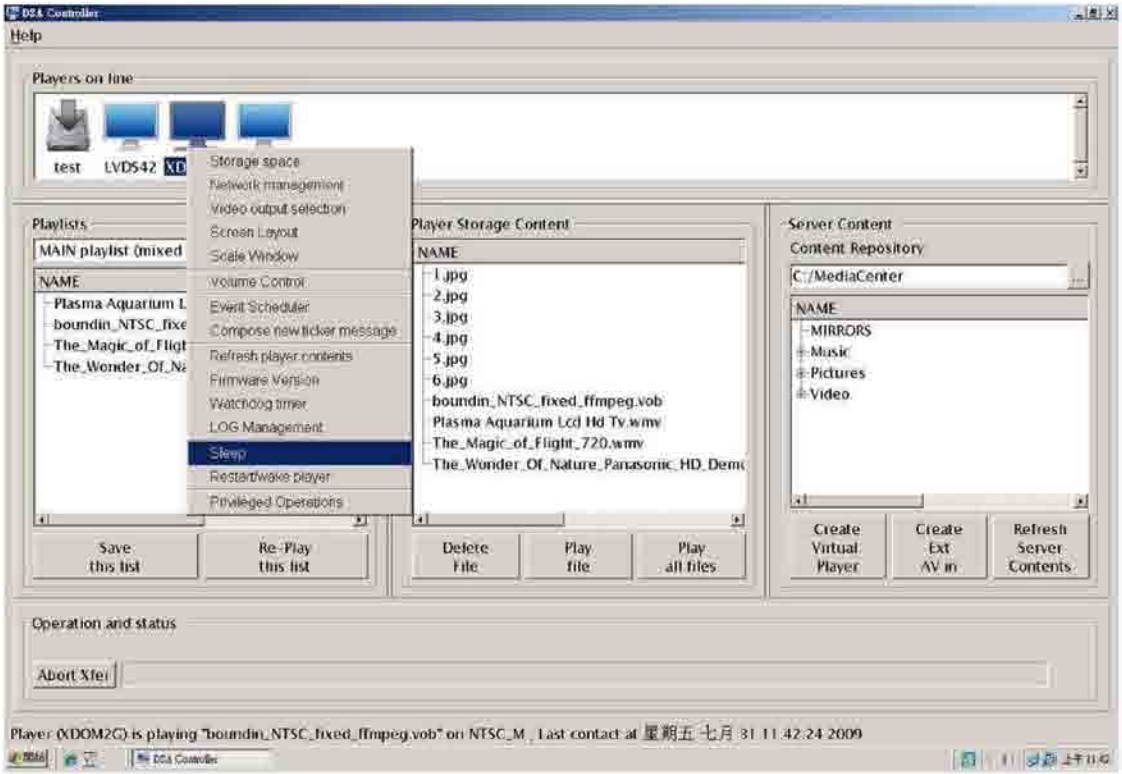

Figure 32: Sleep menu item

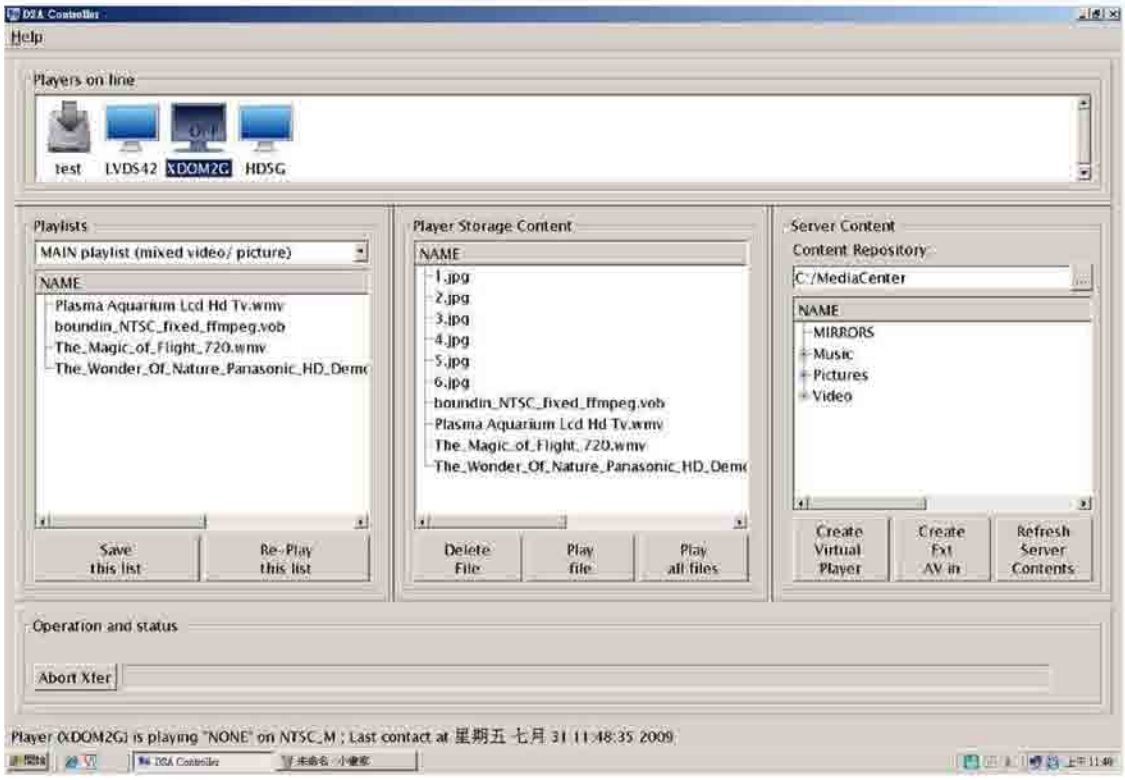

Figure 33: Sleeping player (the one with OFF icon)

N. "Restart/wake Player" (Figure 34): Remotely reboot the signage player

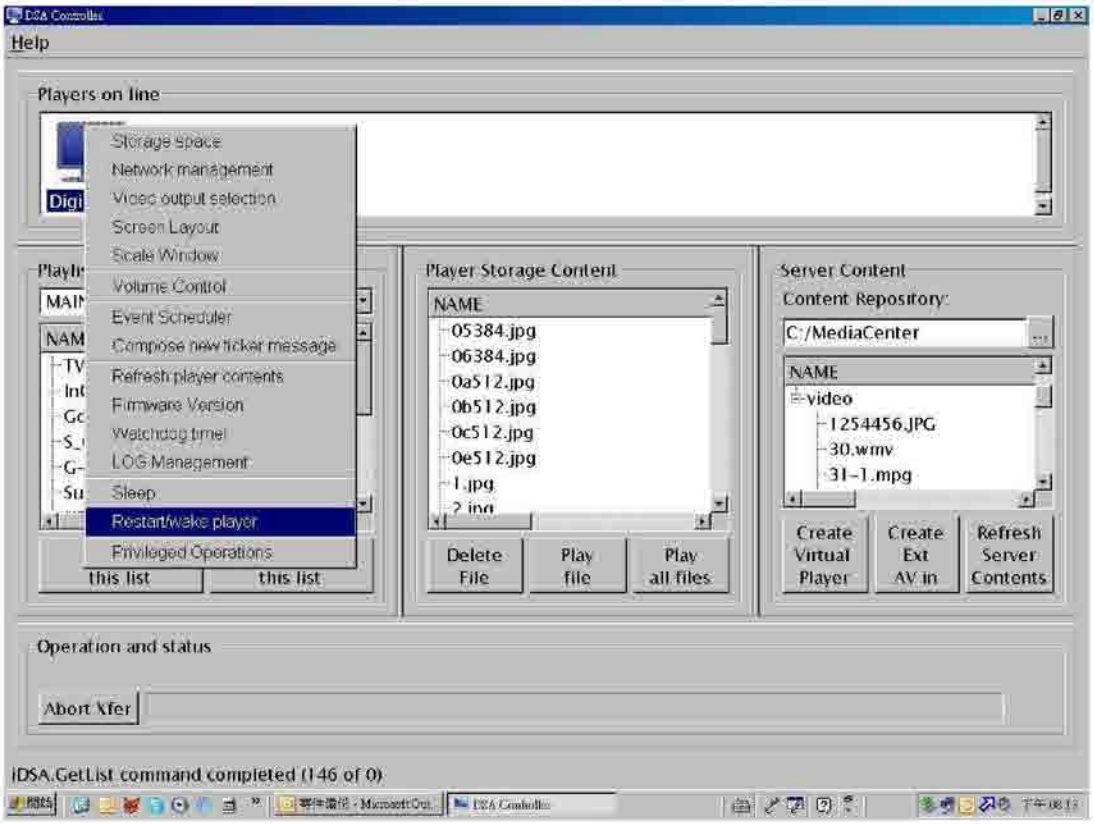

Figure 34: Reboot menu item

O. "Privileged Operations" (Figure 35): There are some protected operations that requires special authorization. These kind of operations are grouped into this dialog (Figure 36).

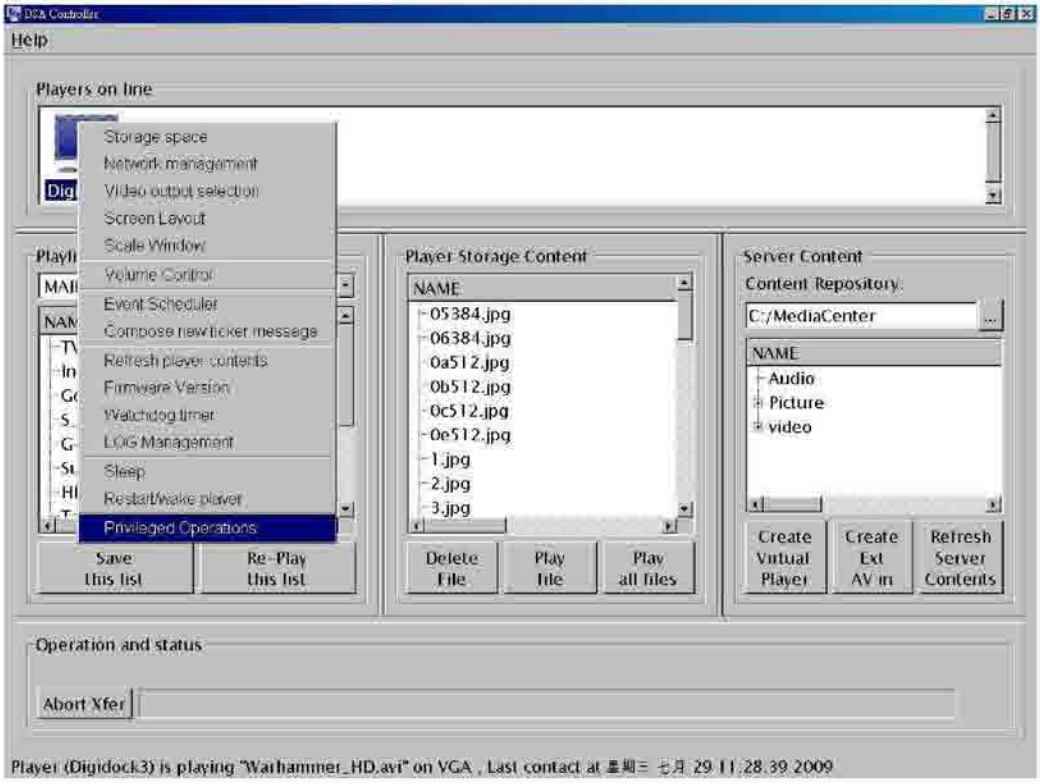

Figure 35: Privileged Operation menu item

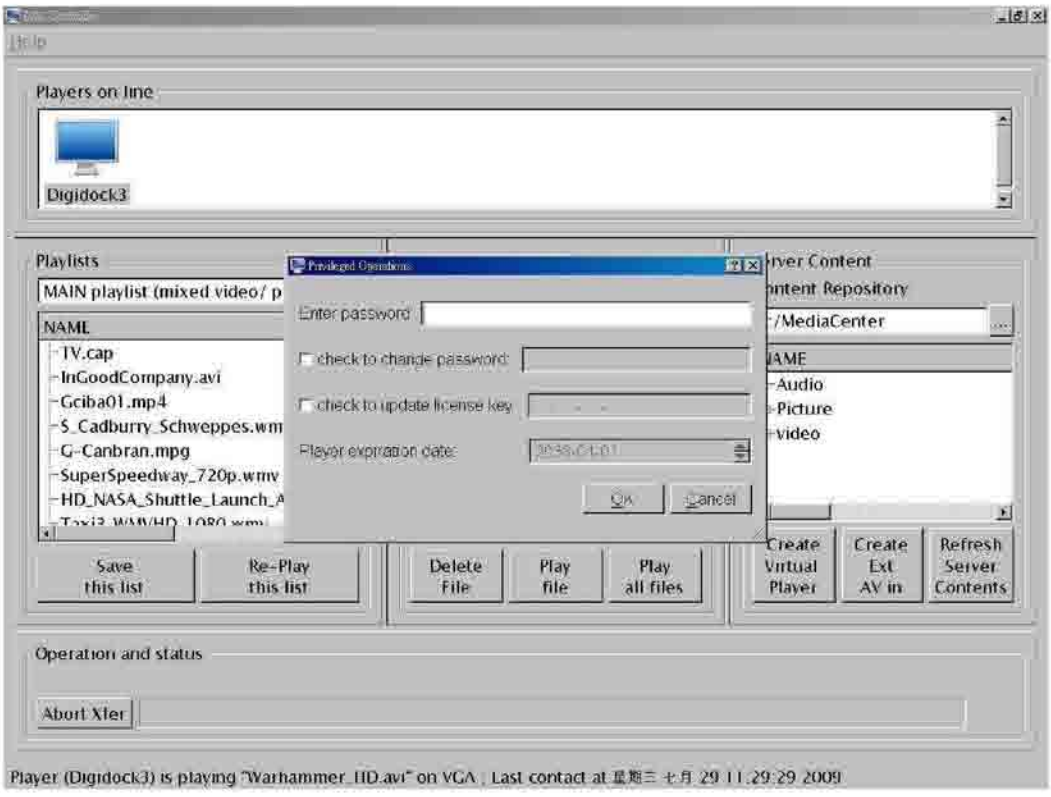

Figure 36: Privileged Operation dialog

In Figure 36, mandatory password is the authorization code to use this dialog. This must be obtained from the signage system administrator. This authorization code can be changed in this dialog.

Each signage has its own unique machine code with an expiration date. These are guarded by a license key. The license key is given by the signage player vendor or system integrator. The license key update is also performed in this dialog.

3. Transfer a file to the sinage player

Cick the target signage player icon. Double click the file to be transferred in the "Server Content" window. And the file transfer will start. The progress will be seen on the progress bar (Figure 37). The file transfer can be stopped prematurely by clicking the "Xfer Abort" button anytime. The new file will appear in the "Player Content" pane when the transfer is completed. An aborted file transfer may result in a partially transferred file appeared in the "Player Contents" window. Although this file can be played, it is recommended to delete it manually using the "Delete File" button. .

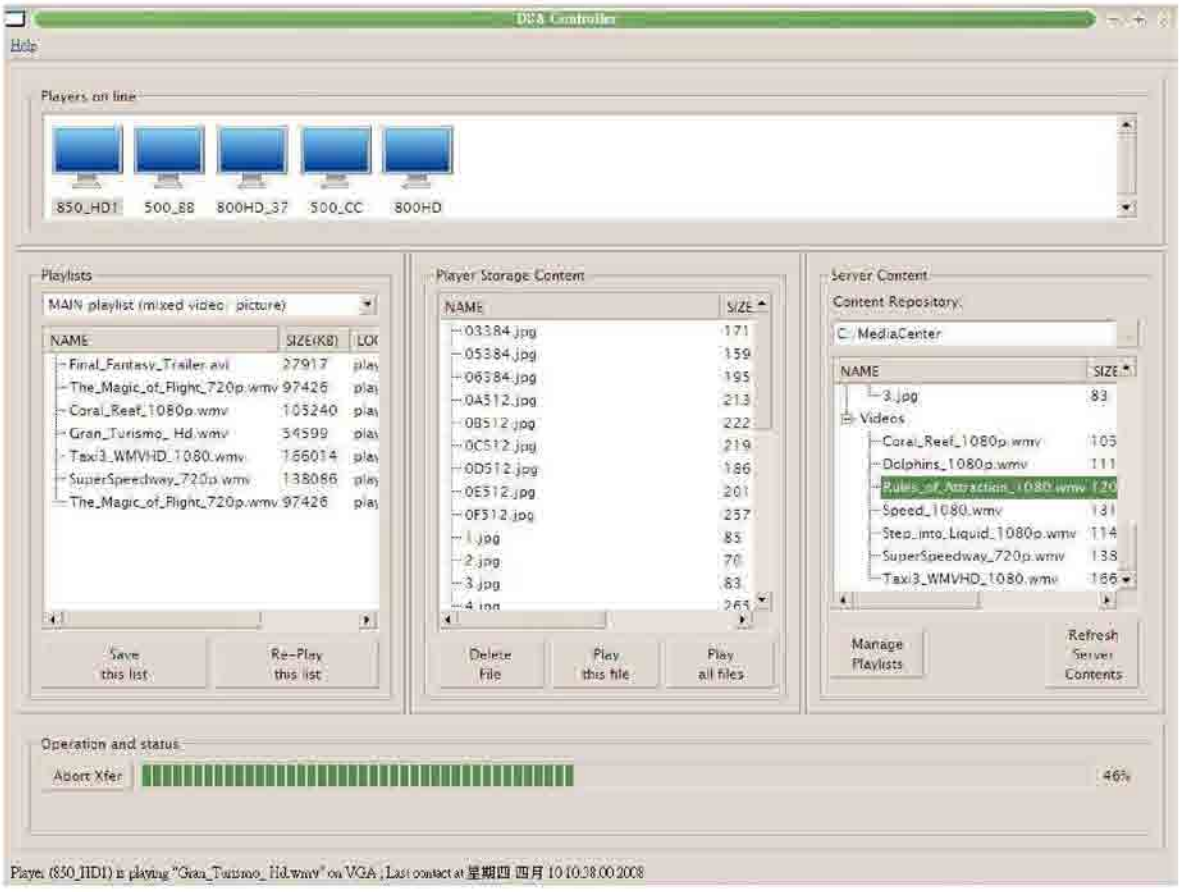

Figure 37: File transfer in progress

4. Adding a new entry to the Playlist: Select the designated playlist from the combobox (Figure 42, Figure 43, and Figure 44). Move the cursor to the file to be added to the playlist and double click the file. The file name will appear at the bottom of the playlist. Save the playlist by clicking the "Save this list" button. Figure 38 and Figure 39 show the playlist before and after adding "1.jpg" item.

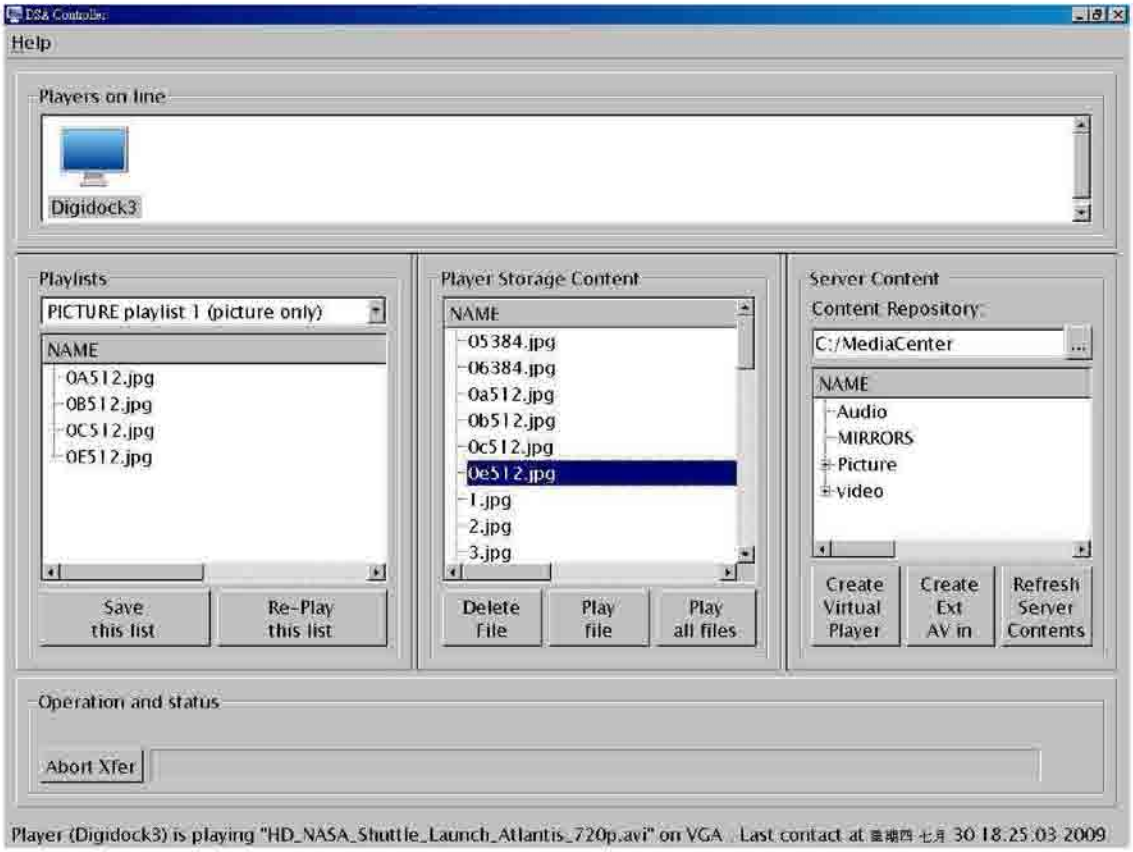

Figure 38: Prior to adding a new entry to the playlist

5. Initiate a continuous play

i. Play this file: select the file in the "Player Content" window and and click the "Play this file" button.

ii. Play all files: Click "Play all files" button, the signage player will play all files found in the "Player Content" list.

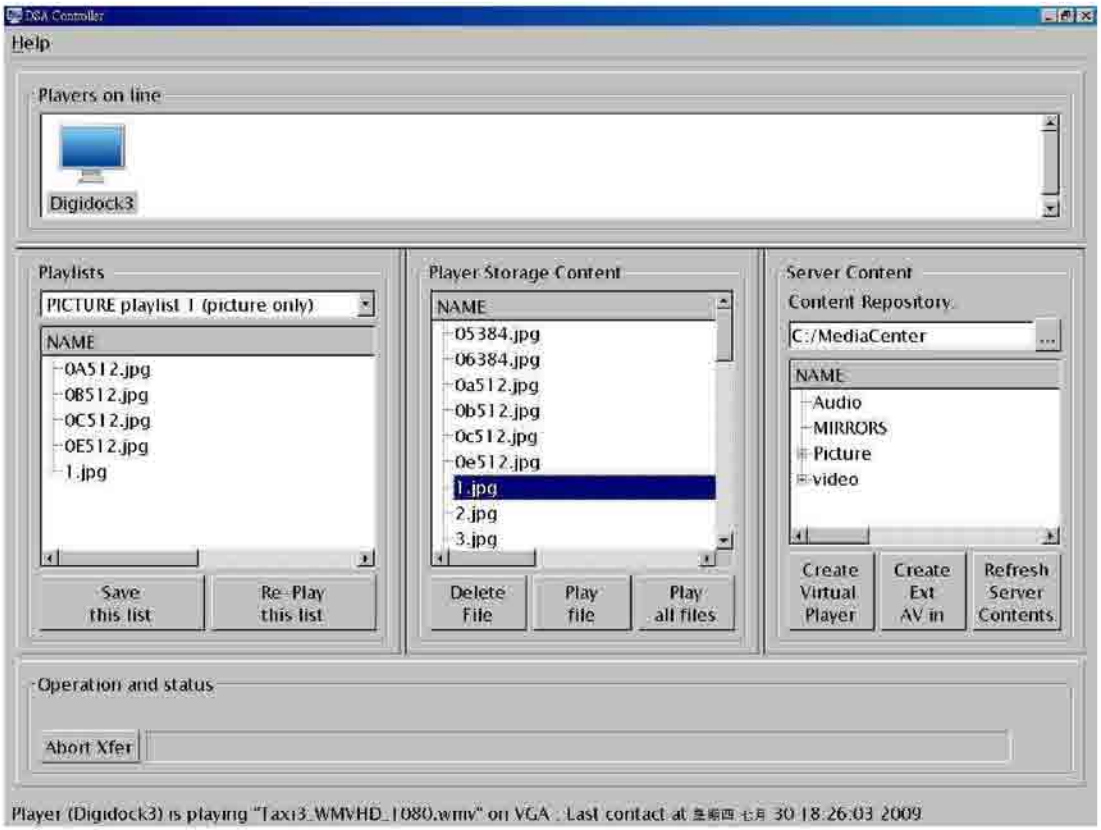

Figure 39: "1.jpg" entry is just added to the playlist

6. Manage playlist items: Select the target playlist (Figure 42, Figure 43, and Figure 44). Right click on an playlist item in the "Playlis"t pane (Figure 40).
   1、 The item can be moved up one step on the list by clicking "Move Item Up"..
   2、 The item can be moved down one step on the list by clicking "Move Item Down".
   3、 The item can be removed from the list by clicking "REMOVE ITEM".
   4、 The list can be clear by clicking "CLEAR ALL ITEMS".
   5、 For the still pictures or AV input items, the playback elapse time can be adjusted by right click the item and press the "CHANGE DISPLAY TIME" menu item (Figure 41).

   Note: The operator needs to press "Save the list" button to make the new list permanent.

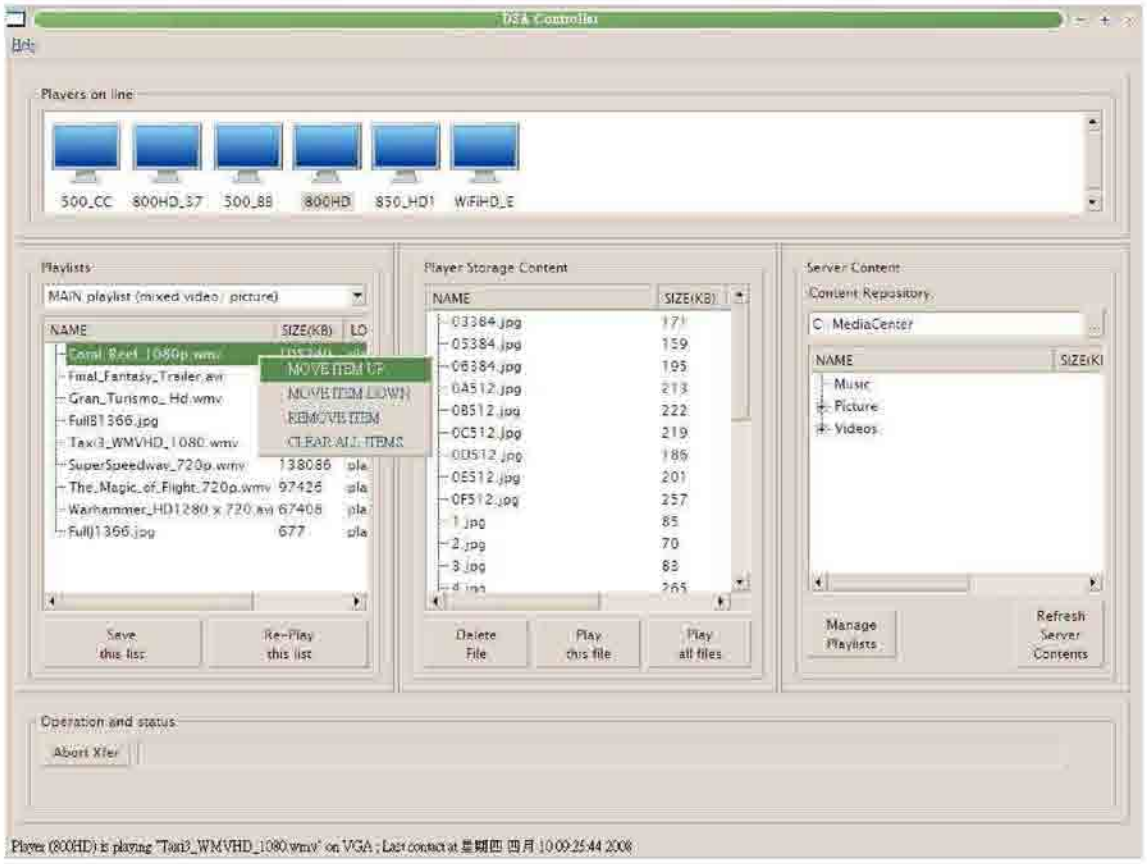

Figure 40: Move up a playlist item

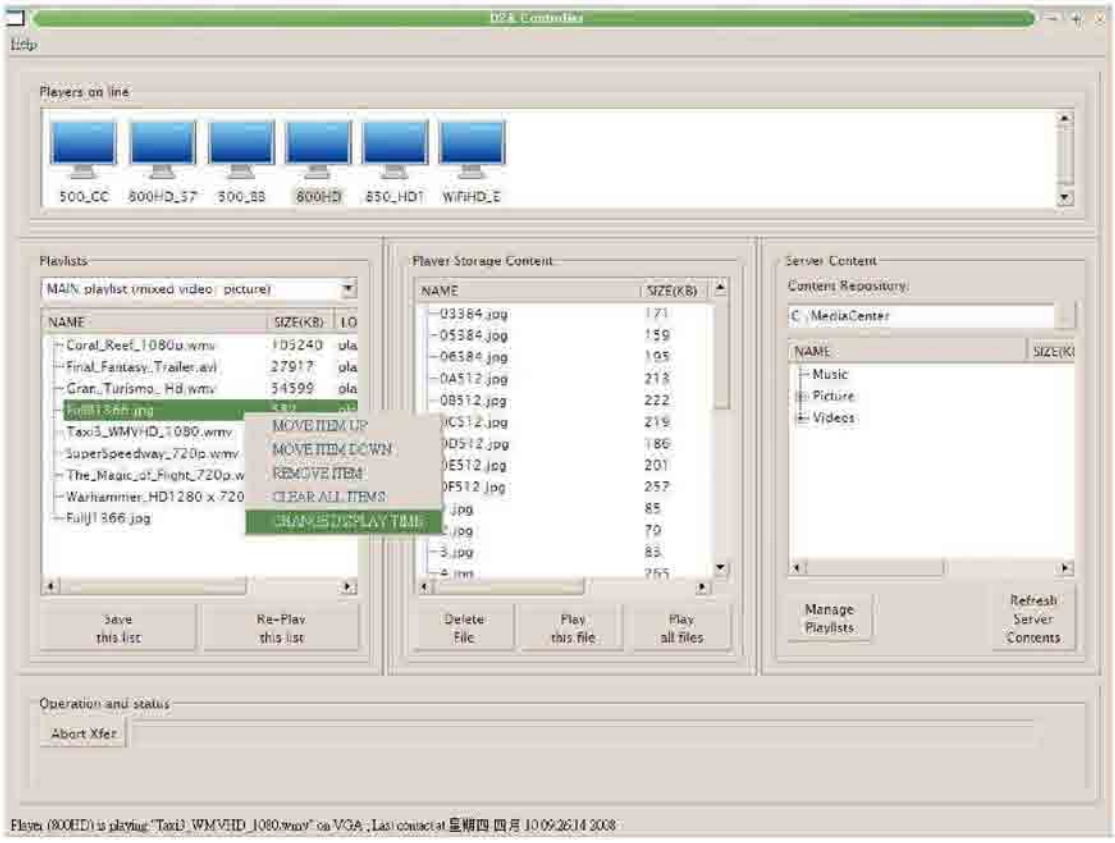

Figure 41: Change playback time

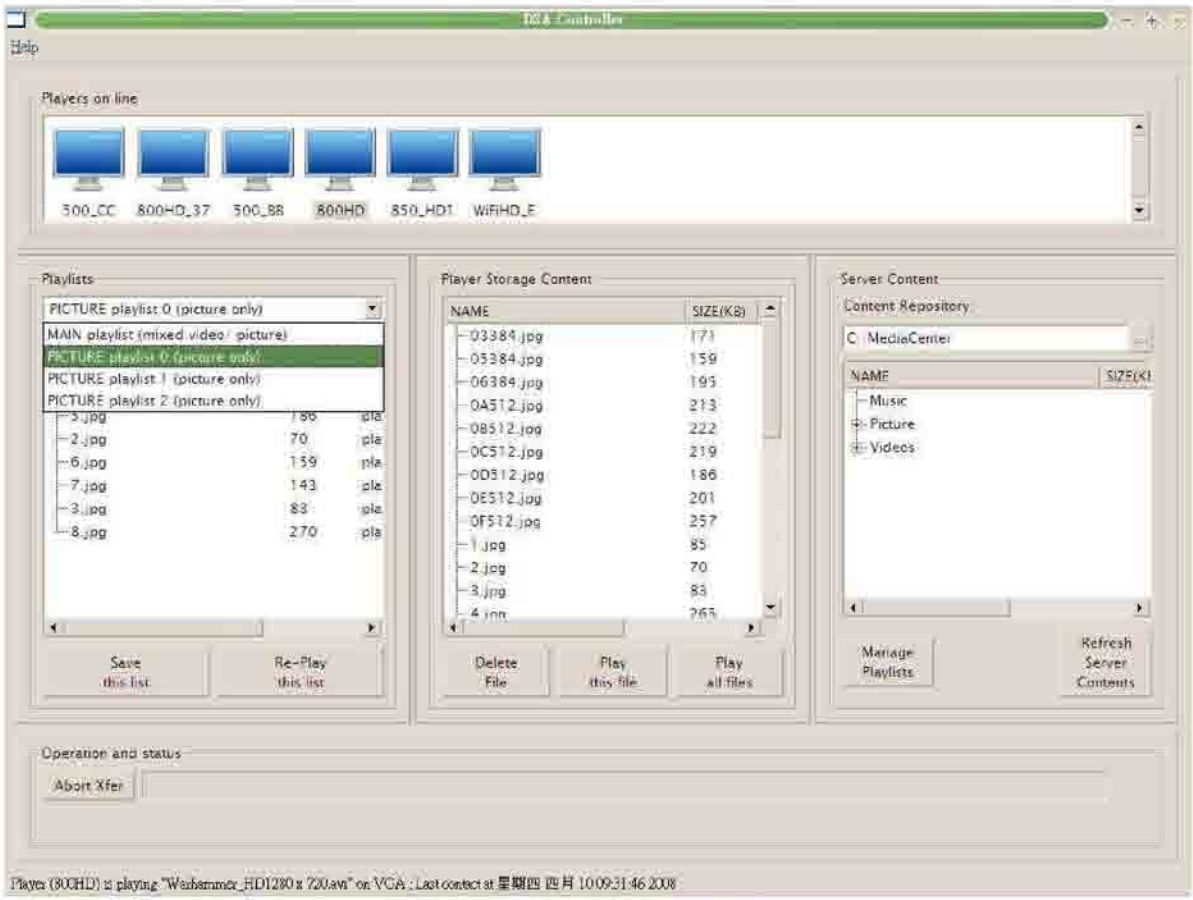

Figure 42: Select "PICTURE only" playlist 0

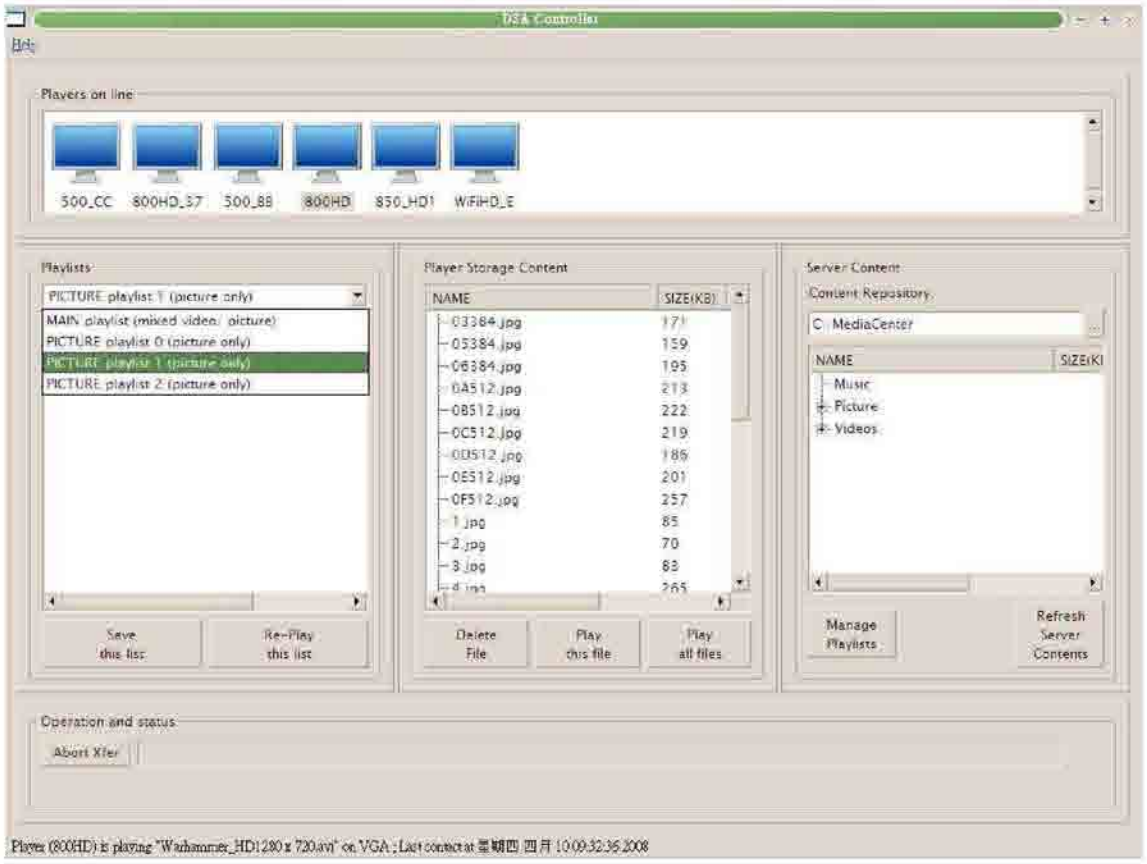

Figure 43: Select "PICTURE only" playlist 1

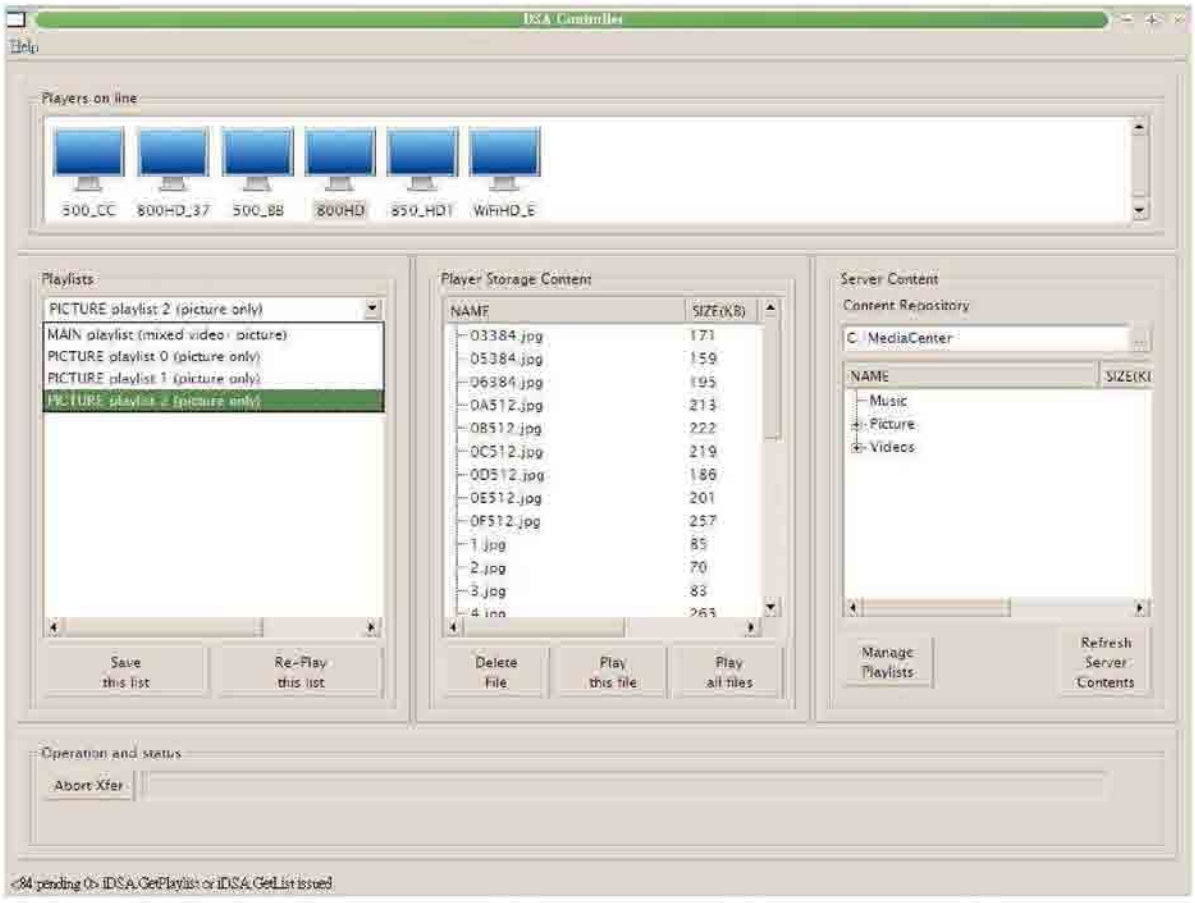

Figure 44: Select "PICTURE only" playlist 2

7. Delete a file from the singage player's storage: Left click a title on the Player Content list (Figure 45). Press the "Delete File" button. Press "Yes" button. The file will be deleted from the signage player. The same title will also be removed from Player Content and the corresponding playlist, if applicable.

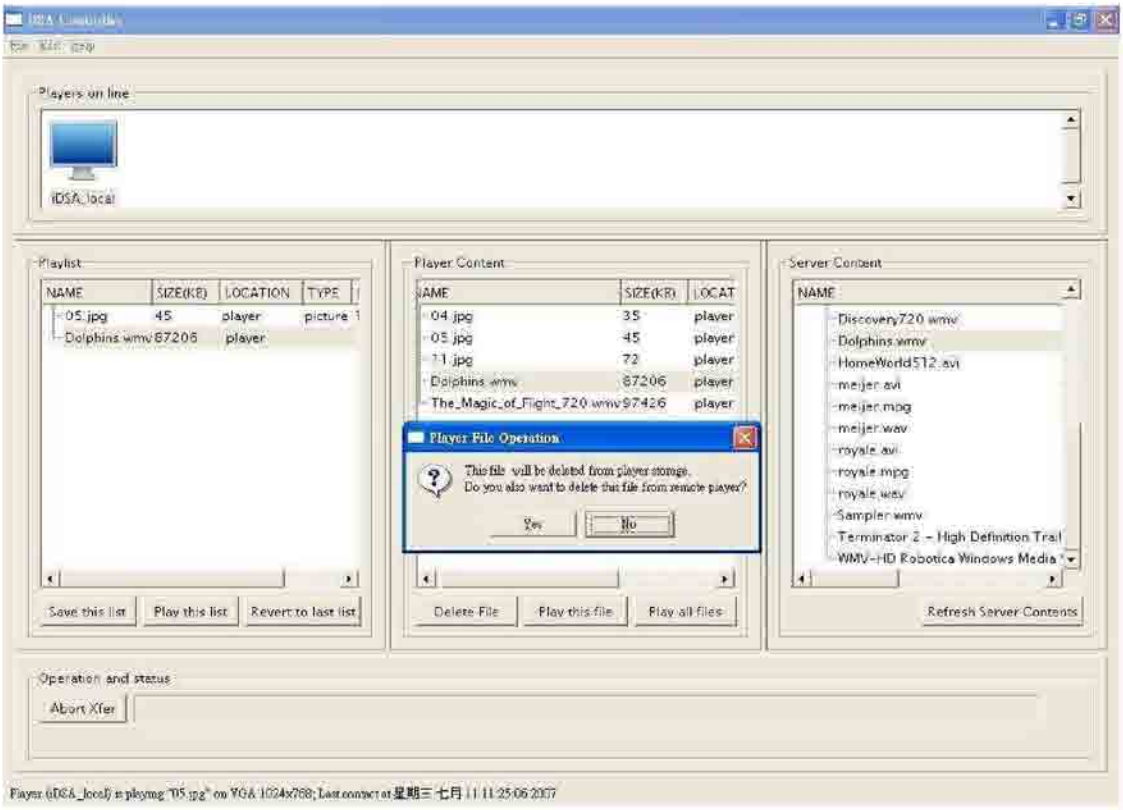

Figure 45: Delete a file from the player's storage

8. Adjust the size of "Player on line" pane: Use the horizontal resize bar between "Player on line" pane and "Playlist" pane, drag it up and down.
9. Adjusting the size of "Playlist" pane, "Player Content" pane, or "Server Content" pane: Use the vertical resize bar between individual panes. . Drag it left or right.

8 Event/Task Scheduling

The signage player can be scheduled to perform certain tasks periodically and automatically. The tasks that can be pre-programmed are POWER OFF, POWER ON,UPDATE CONTENTS, and POLL MODE OPERATION.

Right clickan Player icon, left click on the "Event Scheduler" menu item (Figure 46) to get to the Event Scheduling dialog..

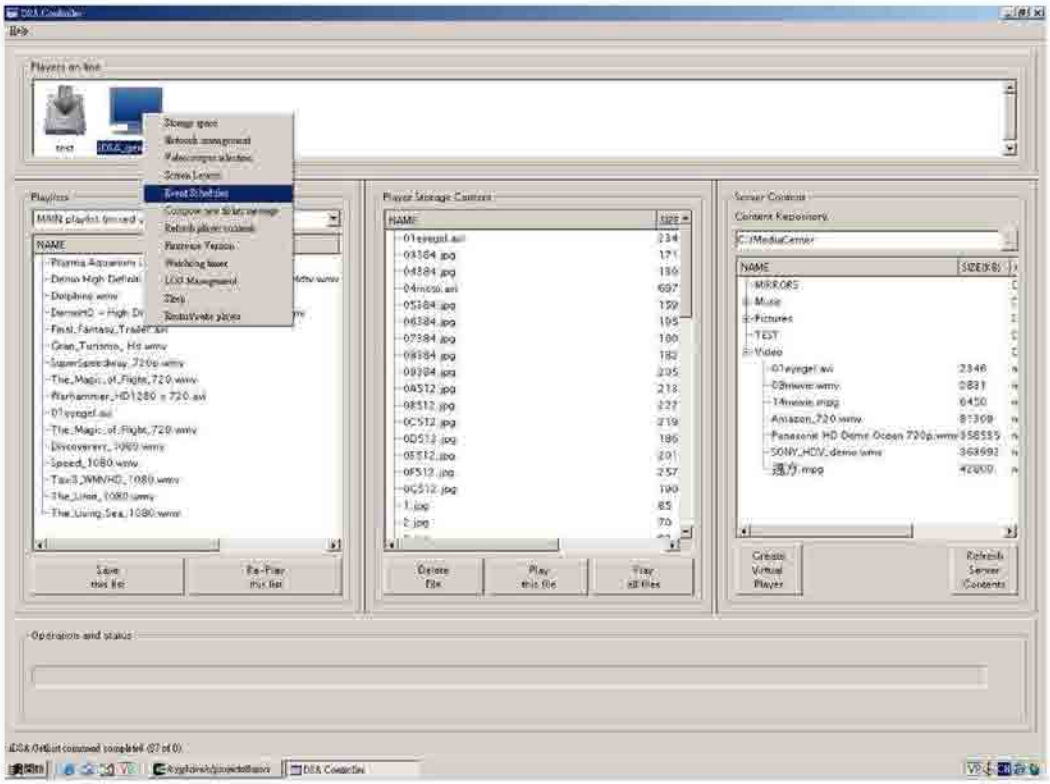

Figure 46: Event/Task scheduling menu item

The right half of the event/task scheduling dialogshows the current scheduled events and tasks. Unwanted tasks can be deleted from the list by pressing "Delete Task" button. New task can be added onto the list by selecting the event, fill in the event's parameters and press "Add task" button.

When the final schedule is done, press "Commit & Close" button to make the new schedule official.

The following sections explain each task/event's parameters.

1. Scheduled power off (Figure 47)

Select "Power off" item on the action combo box (Figure 47). Fill in the repeat time table, and the signage player will enter sleep mode automatically at the specified time. Normally this is scheduled before an automatic update task or a poll mode task.

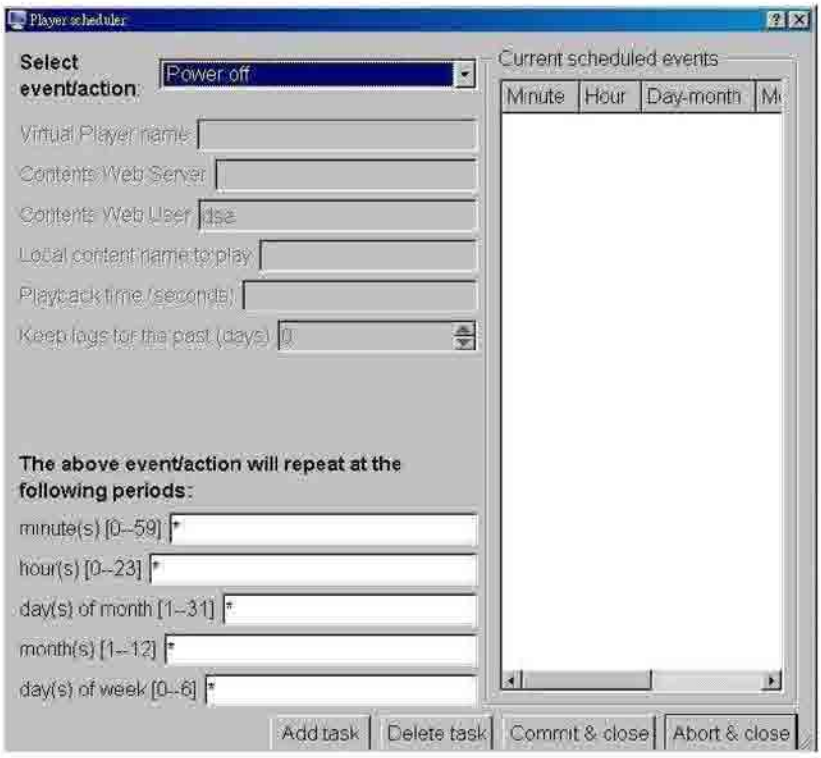

Figure 47: Power-off task scheduler dialog

2. Scheduled power on (Figure 48)

Select "Power on" item on the action combo box (Figure 48), fill in the repeat time table. This will reboot the signage player automatically at the specified time. Normally this is scheduled to re-start the signage player after automatic power-off followed by file transfer or poll mode tasks

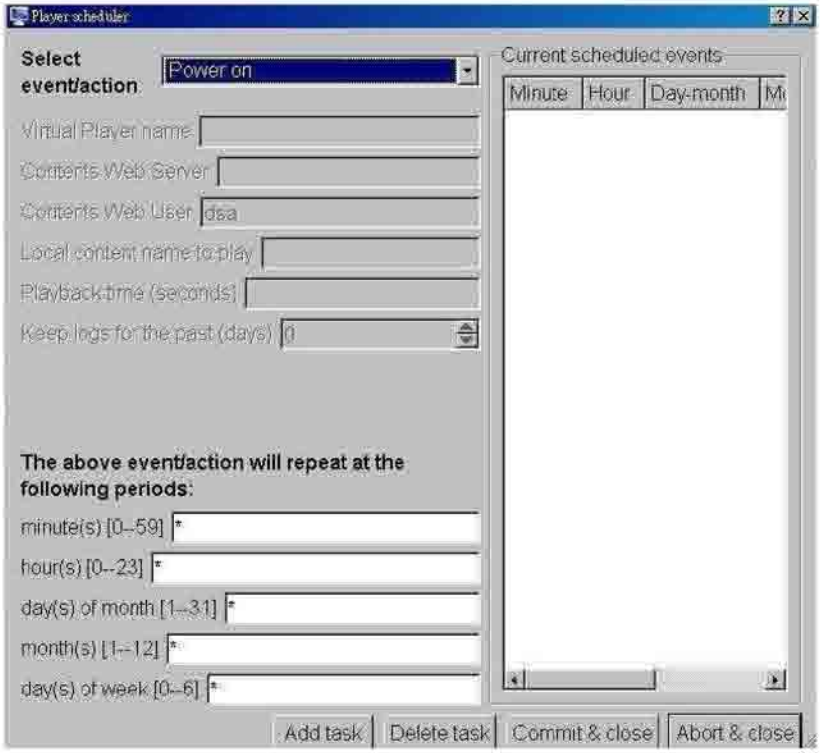

Figure 48: Power-on task scheduler dialog

3. Scheduled update local storage contents (active file transfer), see Figure 49.

   Select "Update Playlists and Contents" item on the action combo box, fill the "with parameter" box with the virtual player name (describe below) and the time pattern. The sinage player will automatically download the playlists and contents from the Content Server at the location identified by the "Virtual Player name".

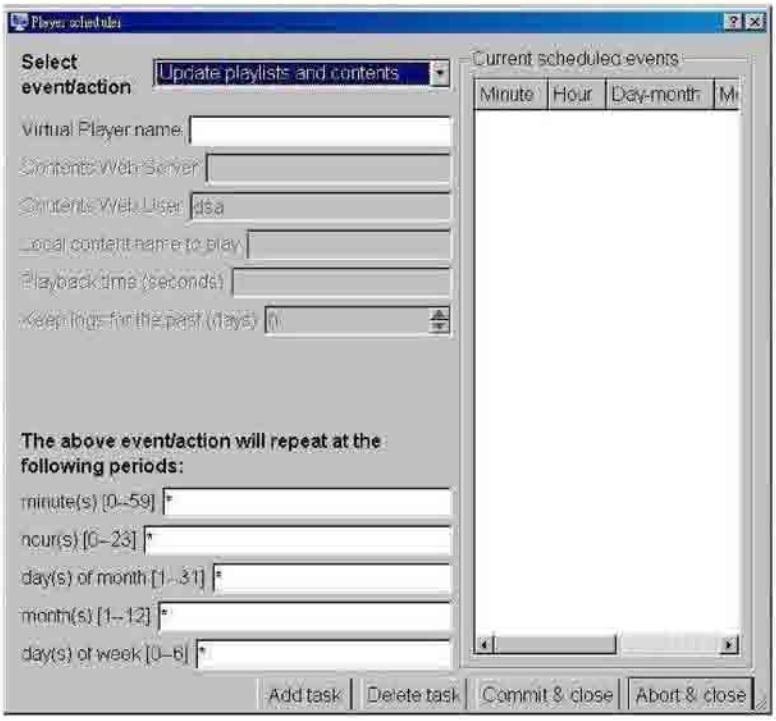

Figure 49: Scheduled file transfer dialog

4. Scheduled Poll mode

Select "Switch to POLL mode operation" item from the combobox (Figure 50) and fill the Virtual Player name, Contents Web Server, Web user name, and repeat time pattern, the signage player is programmed to enter web-based "poll mode" (see Section 9: Web Based Poll Mode Operation on page 53) at the specified time.

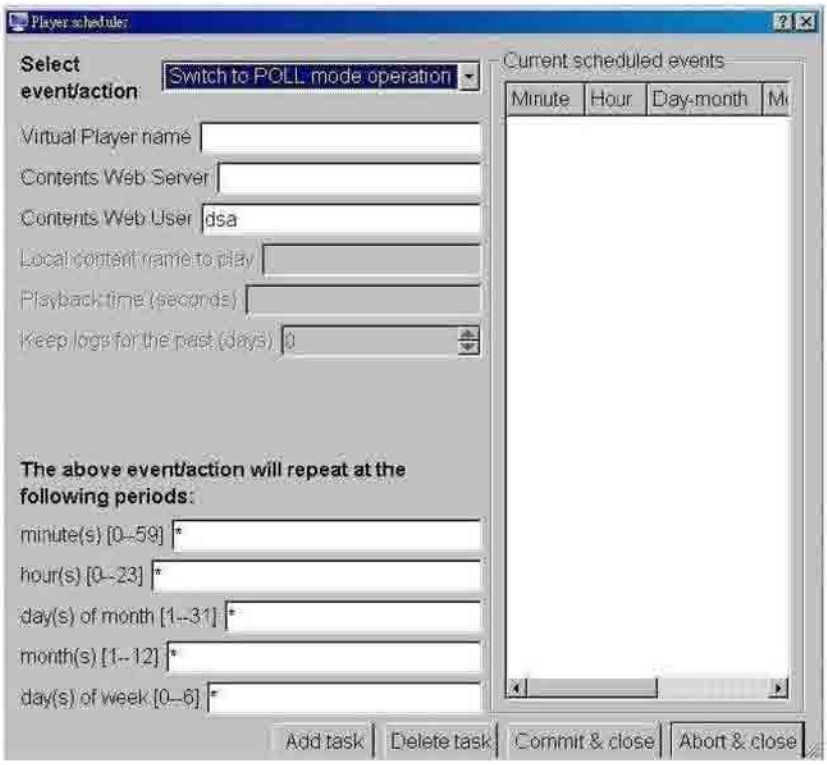

Figure 50: Switch to POLL mode scheduler dialog

5. Specify event repeat pattern

1. Minutes: specify the minute when the event would be active. Valid range is 0 to 59.
2. Hours: specify the hour when the event will happen. Valid range is 0 to 23.
3. Day of month: specify the day of month when the event will happen, valid range is from 1 to 31.
4. Month: specify the month when the event will happen, valid range is from 1 to 12.
5. Day of week: specify the day of week when the event will happen, valid range is from 0 to 7. Both 0 and 7 stands for Sunday.
6. Two numbers separated by '-' specifies a strict range. For example, "5-10" in Minutes field means from minute 5 to minute 10.
7. A single '*' represents entire valid range. For example a '*' in Minutes field means "minute 0 to minute 59".
8. A range followed by a '/' and an "interval" number means "Every interval within the range". For example "*/5" in Minutes field is equivalent to "every 5 minutes within the entire range, that is from minute 0 to minute 59".
9. More than one pattern can be specified in the same field, separated by ','.

6. Press the "Add Task" button to add the new task to the task list. Otherwise the new task will not be committed.

7. Concept of Virtual Player

A virtual player is a collection of playlists and their related audio/video content file. It is designed to be shared by multiple Digital Signage Players as the model contents collection over the network.

Generally a virtual player can be treated like a regular signage player except that it does not perform actual network communication and content playback. What it does is to provide a named container that holds the playlists and media files for any signage player to pick up during an automatic file transfer procedure.

The general procedure to build a automatic file transfer is

1. Create a virtual player with an operator specified name (see below, lower right corner "Create Virtual Player" button), the new player will show up on the player's list with a different icon (Figure 51).

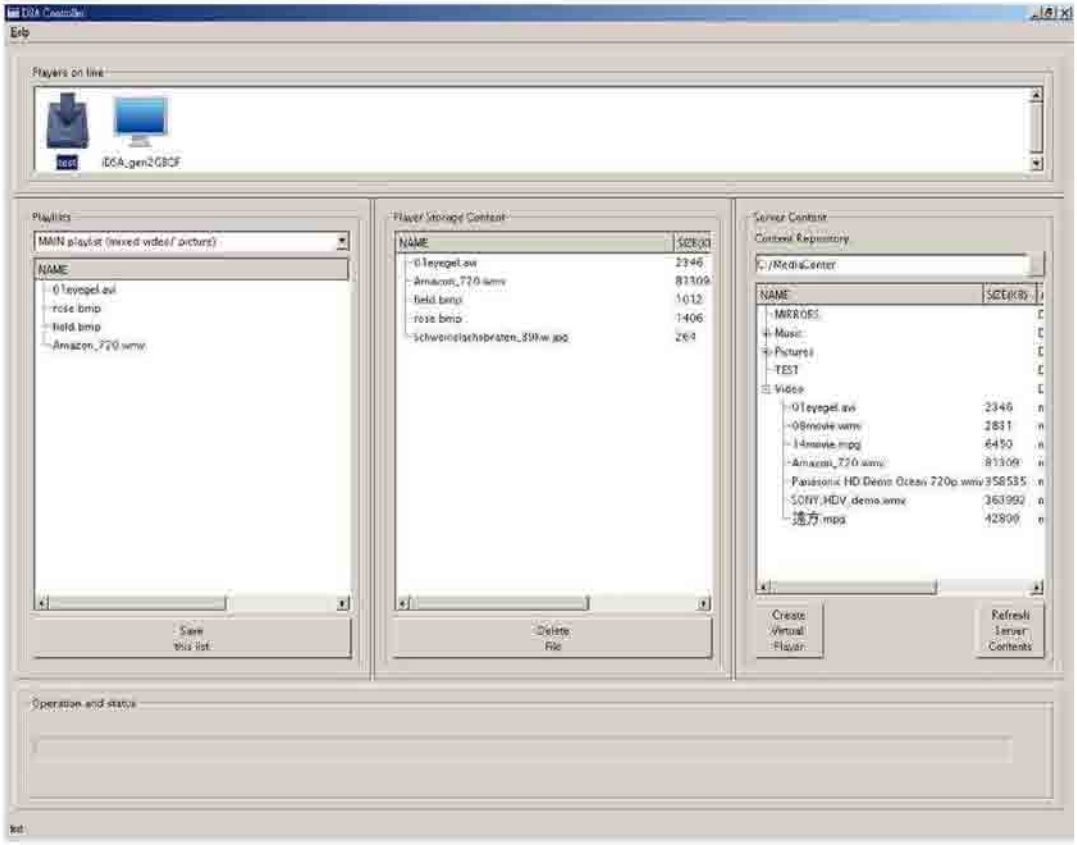

Figure 51: Virtual Player

2. Fill the virtual player's contents and program its playlist just like any regular player
3. Schedule an POWER OFF event on the regular players who want to synchronize their contents with this virtual player
4. Schedule an UPDATE CONTENTS event on the above set of regular players. Old contents in the signage player will all be erased during the process.
5. Schedule an POWER ON event on the same set of regular players. Allow enough time for the file transfer to complete.
6. It is highly recommended that POWER OFF event comes before UPDATE CONTENTS and then later on with POWER ON command. The is for better system integrity and higher file transfer speed.

8. Audio/Video Inputs

For those singage player models that have the optional Audio/Video Input module installed, follow this procedure to integrate the Audio/Video input data into the player contents and playlists.

1. Press the "Create Ext AV in" button to create a meta media object (Figure 52)

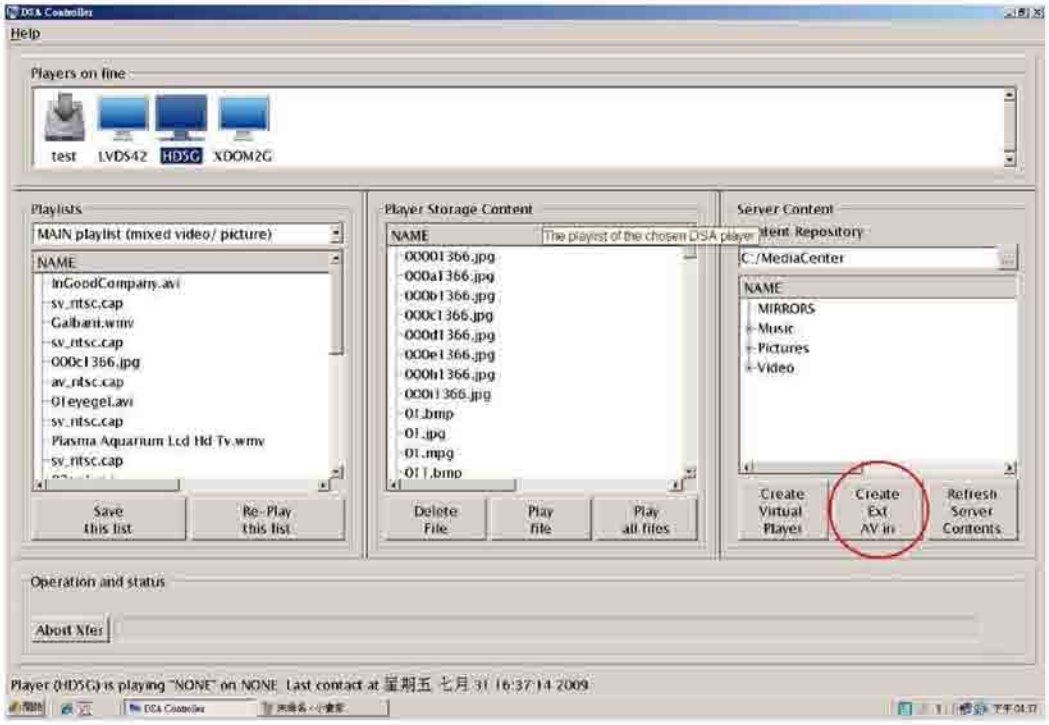

Figure 52: AV input item creation

2. Select the input source (CVBS or S-video) and format (NTSC M, PAL 60, or PAL BG) (Figure 53)

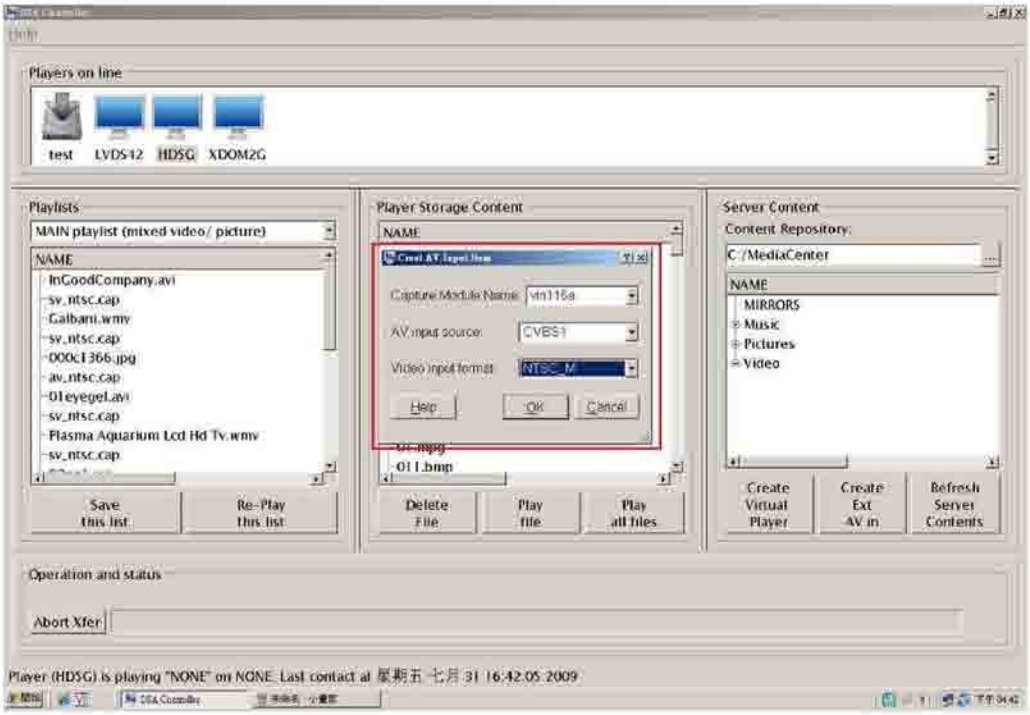

Figure 53: AV input meta object parameters

3. Press "OK", and assign a name to it (Figure 53)
4. A meta file with the specific name will be created in MediaCenter\Video directory
5. Treat this newly created file as a regular still picture file. It can be transferred to a signage player across network. It can be assigned to a playlist and change playback duration time. It can also be played repeated as a single playback item. It can be removed just like any other media file.

9. Web Based Poll Mode Operation

Networked interactive mode (Section 7 Networked Interactive Operation on page 15) is good for daily operations. The command responses are quick and the players status can be monitored at near real time speed. However special firewall configurations are needed in case either the content server or the signage players are located behind firewalls.

If there are a small number of signage players sitting behind firewalls, DMZ is supported to bypass the firewalls.

If there are a larger number of signage players protected by firewalls, port forwarding is a better solution than DMZ.

However, large scale internet deployment of networked digital signage players requires more convenient solution than either port forwarding or DMZ. This is where Web-based Poll mode operation comes to play.

The POLL mode idea is for the signage player to proactively poll a content server periodically for commands and contents through internet service port 80 which is normally reserved for WWW HTTP service. Firewall complexity is alleviated since most router allow port 80 to remain open for Web server.

The Web server in this application can be but need not be the same as the control server that runs DSASVR program.

Both signage player and the Web server need special preparation for the POLL mode to work.

1. On Signage Player side
   Use Event/Task scheduler to tell the signage player when and how often it should start polling the Web server for action and content, follow the instructions explained in Figure 50 on page 50.

2. On Web Server side
   1. Use Apache "UserDir" module to create a Web user "dsa". On a Linux installation of Apache, the Default location of the public accessible directory for "dsa" via http://www.this.server/~dsa/ is "/home/dsa/public_html". For the HTTP server other than Apache, follow the server's instruction to create accounts for new Web user.
   2. Create other Web User accounts to group Networked Signage Players, if necessary.
   3. On a PC that runs DSASVR, create a virtual player to set up the contents, playlists, and tickers for a target signage player or player group
   4. Copy the virtual player's entire directory tree to the Web Server's /home/dsa/public_html. For example, if the virtual player's name is "test", copy c:\MediaCenter\MIRRORS\test to /home/dsa/public_html/test.
   5. On Web server, change directory to /home/dsa/public_html/test, and manually create a action script named "directives.xml" for the target signage player on its next poll cycle. The action script contains simple lines of commands and arguments. The first command line must be "SequenceNumber" followed by a arbitrary number. Table 1 lists the available commands the their arguments.

Command	Argument	Description
SequenceNumber	An arbitrary number	Identification of this action script
Stop	None	Stop the player
Restart	None	Reboot the player
Volume	A number in range 0 to 74	Set player's volume
VideoMode	A video mode string derived the DSASVR video connector menu, e.g. "VGA" is to set video mode to VGA 1024x768 60 Hz	Set player's video mode
ScreenLayout	A number in range 0 to 7	Set split-screen layout

Update	A string "Playlist"	Tell the signage player to update all playlists
Update	A string "Tickers"	Tell the signage player to update tickers
Update	A string "Contents"	Tell the signage player to update the content files, all previous content files will be erased

Table 1: POLL mode action list

As an example, the following action script asks the player to Stop playback, set volume to 49, set screen layout to 7, and update playlists, ticker, and content files and then reboot.

```
SequenceNumber 1302
Stop
Volume 49
ScreenLayout 7
Update Playlists
Update Tickers
Update Contents
Restart
```

10. Standalone Mode Operation

Standalone Mode Operation is designed for those applications that networking is not available or not required.

Since there is no networking, playlists and content files are transferred via USB storage devices follow these steps:

1. On content server, create a virtual player
2. Configure the virtual player just like a regular player
3. Populate the virtual player's contents and playlists just like a regular player
4. Copy the virtual player's directory tree to a clean and virus free external USB storage device (card reader, USB stick, USB hard drive, etc.)
5. Turn off the target signage player
6. Plug the USB storage device to one of the USB sockets, make sure the other USB socket is empty
7. Turn on the player
8. Follow the screen instructions and turn off the player at the end
9. Pull out the USB storage device
10. Turn on the player to start playing new content files

11. Firmware Update

New releases of firmware can be updated via USB following these procedures:

1. Obtain new firmware update package from your vendor
2. Rename the file to " iDSA PLUGINS.tar" if not already done so
3. Copy this file to a clean and virus free USB storage device
4. Turn off the target signage player
5. Plug the USB storage device to one of the USB sockets, make sure this is the ONLY USB device in use
6. Turn on the player
7. Follow the screen instructions and turn off the player at the end
8. Pull out the USB storage device
9. Turn on the player with new firmware

In some cases, lost or corrupted system configuration parameters, such as LAN and video mode settings, can be restored or reset using the same approach. Ask your technical support for how to restore or reset system parameters via USB.

12. Firmware Network API

For those who are interested in writing their own application software to communicate with the signage player, XML-RPC 1.0 is used to implement the network API between the singage player and its control server.

1 Communication protocol summary

1、 Command and simple text data exchange: XML-RPC, TCP port 8888 on both player and server

2、 Transfer files (from server to player)

1. Using push model: ftp service at port 2121
2. Using pull model: HTTP file server on PC side, port 8899
3. Batch data download using pull model: wget service

3、 A heartbeat method is sent from signage player to server every 20 seconds.

2 XML-RPC heart beat method format

1、 XML-RPC command name "iDSA SVR.registerNewPlayer"

2、 Command arguments is a list of strings: hostname, IP, current filename that is being played, video mode, LAN IP, WLAN IP, ESSID, KEY, server IP, LAN chipset, WLAN chipset, LAN gateway, LAN mask, WLAN gateway, WLAN mask.

3 Pull mode file transfer progress report: use XML-RPC command name "iDSA SVR.wgetProgress" with the file transfer progress data as argument

4 XML-RPC Command API (for host/server to talk to player) Table 2.

COMMAND	INPUTS	OUTPUTS	COMMENTS	version
iDSA.GetMediaFileList	N/A	List of struct of two name-value pairs: name (string) and size (int)	Retrieve the list of all media file in the player's content repository	1.4
iDSA.GetPlaylist	N/A	List of strings, each string represent one line in the playlist file	retrieve the playlist file	1.0
iDSA.DeleteMediaFile	Filename (string) to be deleted.	N/A	Delete a media file	1.0
iDSA.PlaySingle	Filename (string) to be player	N/A	Start playing a media file	1.4
iDSA.Stop	N/A	N/A	Stop the playback action	1.0
iDSA.AppendFile	struct of 4 name-value pairs: filename(string), index(int), data (Base64), and checksum(int).	N/A	~~Append a block of data to a file~~ depreciated	1.0
iDSA.FreeSpace	N/A	Array of 2 integers: total disk space and available space in KBytes	Inquire available storage space	1.2
iDSA.SyncDateTime	dateTime.iso8601	N/A	Sync player's real time clock with the server	1.1
iDSA.PlayAll	N/A	N/A	Start playing all files in the content repository	1.0
iDSA.FirmwareVersion	N/A	Version string	Inquire firmware version info	1.4
iDSA.VideoMode	Video mode string	N/A	Update /usr/local/sys/video.env	1.3
iDSA.SetPlayerIP	Chipset string followed by IP string	N/A	Update /usr/local/sys/lan.env	1.1
iDSA.SetServerIP	New server IP string	N/A	Update /usr/local/sys/dsasvr.env	1.1
iDSA.Reboot	N/A	N/A	Reboot the player	1.0

iDSA.SaveAlbum	Array of strings	N/A	Save /usr/local/playlist/album	1.0
iDSA.PlayAlbum	N/A	N/A	Start playing /usr/local/playlist/album	1.0
iDSA.GetServerIP	N/A	IP string	Retrieve server IP address	1.0
iDSA.PlayTicker	N/A	N/A	~~Start playing ticker defined in /usr/local/tickers/ticker.bmp~~ depreciated	1.0
iDSA.StopTicker	N/A	N/A	~~Stop ticker function~~ depreciated.	1.0
iDSA.WLANSetup	Array of 4 strings: chipset, ssid, key, and IP	N/A	Update /usr/local/sys/wlan.env	1.2
iDSA.SetPlayerName	Player's name (one string)	N/A	Update /usr/local/sys/hostname.env	1.2
iDSA.GetLogList	N/A	List of log file names (string)	Retrieve log file names	1.0
iDSA.DeleteLogFile	Filename (string) to be deleted.	N/A	Delete a log file	1.0
iDSA.SetNewTicker	Ticker string	N/A	Set ticker message	1.0
iDSA.SetScreenLayout	Set screen layout mode (0-8)	N/A	Select and set screen layout mode	1.0
iDSA.SaveList	List name and contents	N/A	Save current playlist, not just album	1.0
iDSA.GetList	List name	List conents	Return the playlist conent	1.0
iDSA.ReplaceCrontabEntry	crontab entry	N/A	Replace a crontab entry	1.0
iDSA.DeleteContabEntry	Crontab entry keyword	N/A	Delete all entries with the same key	1.0
iDSA.SetDMZ	DMZ IP	N/A	Define DMZ IP	1.0
iDSA.Sleep	N/A	N/A	Put the player into sleep mode	1.0
iDSA.PullFile	File name	N/A	Pull (download) the file from server's http file server	1.0
iDSA.RenameContentFile	Old file name and new file name	N/A	Rename a file in the box	1.0
"system.listMethods"				XMLRPC 1.0 spec

"system.methodHelp"				XMLRPC 1.0 spec
"system.multicall"				XMLRPC 1.0 spec

Table 2: XML-RPC API methods